Paper TRADE JOURNAL

MARCH 24, 1949

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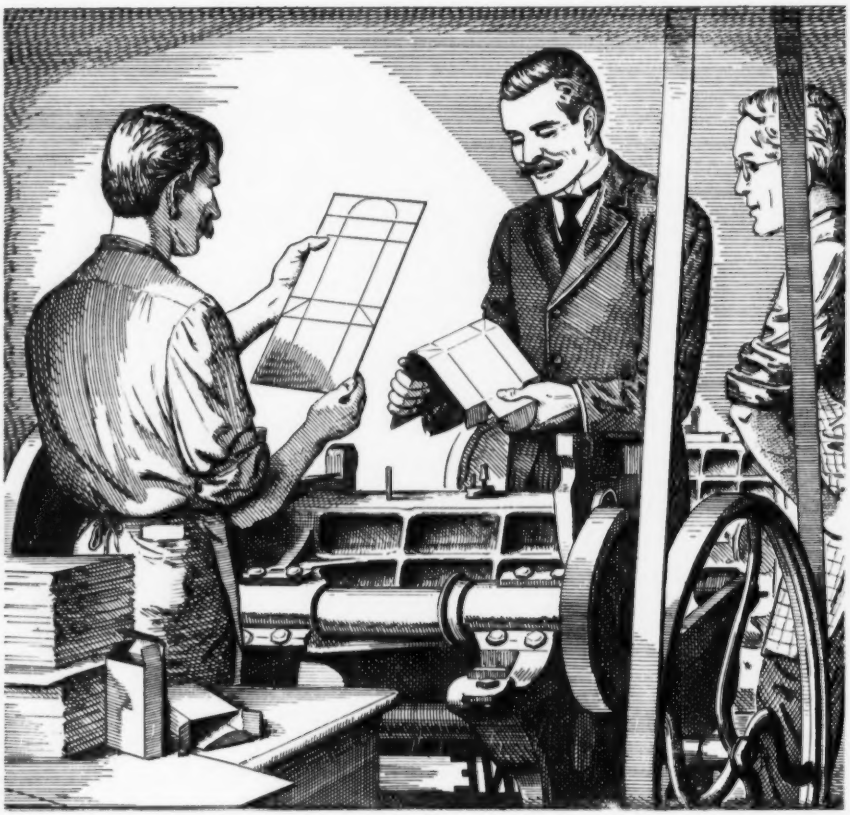

The Accident that Revolutionized Box Making

In 1879, Robert Gair noted that a rule had cut through the paper of some seed bags printed in his shop. The bags were a loss, but the accident gave Gair an idea. If a printer's rule which had become sharp could cut paper, perhaps it would also cut cardboard. If so, why not use a combination of sharp and dull rules to cut and crease folding boxes in a single operation, thus making economical mass production possible? It worked! At first, printing presses were used to form small folding boxes, but soon special machines were turning out large boxes, their exteriors printed, lithographed and embossed.

Robert Gair's accidental discovery revolutionized box making, had a far-reaching effect on packing, shipping and merchandising. Thus began one of the most important developments in the progress of the essential paper and paper-board industries.

The dramatic story of paper is told in the sound-and-color film, "Paper — Pacemaker of Progress," and in a book under the same title. Both are presented by F. C. Huyck & Sons as a tribute to the Paper Industry. The book will be sent free upon request.

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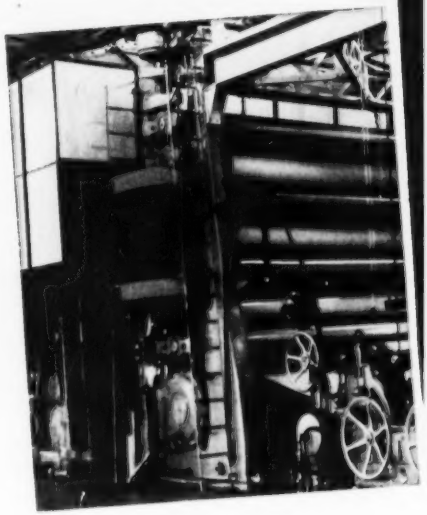

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MEMBER

ABP ABC

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St. Regis Paper Company Reports on 1948

SUMMARY OF CONSOLIDATED INCOME
FOR THE YEARS ENDED DECEMBER 31, 1948 & 1947

	1948	1947
Net Sales, Royalties, and Rentals	$162,672,925.94	$143,864,583.30
Cost of Sales and Expenses	138,402,144.86	120,445,637.30
Operating Income	24,270,781.08	23,418,946.00
Income Credits	1,146,500.80	1,343,654.32
Gross Income	25,417,281.88	24,762,600.32
Income Charges	1,457,579.52	678,458.53
Net Income Before Provision for Federal and Foreign Income Taxes	23,959,702.36	24,084,141.79
Provisions for Federal and Foreign Income Taxes	9,042,499.64	9,325,458.19
Net Income Before Deduction of Minority Interests	14,917,202.72	14,758,683.60
Deduct equity of minority holders of subsidiary's common stock in income	57,400.15	127,358.11
Net Income	14,859,802.57	14,631,325.49
Dividends Paid: Preferred Stock	$ 828,208	
Common Stock	4,136,571	

Provisions for depreciation and depletion charged against income amounted to $4,568,416 for 1948, and $3,576,403 for 1947.

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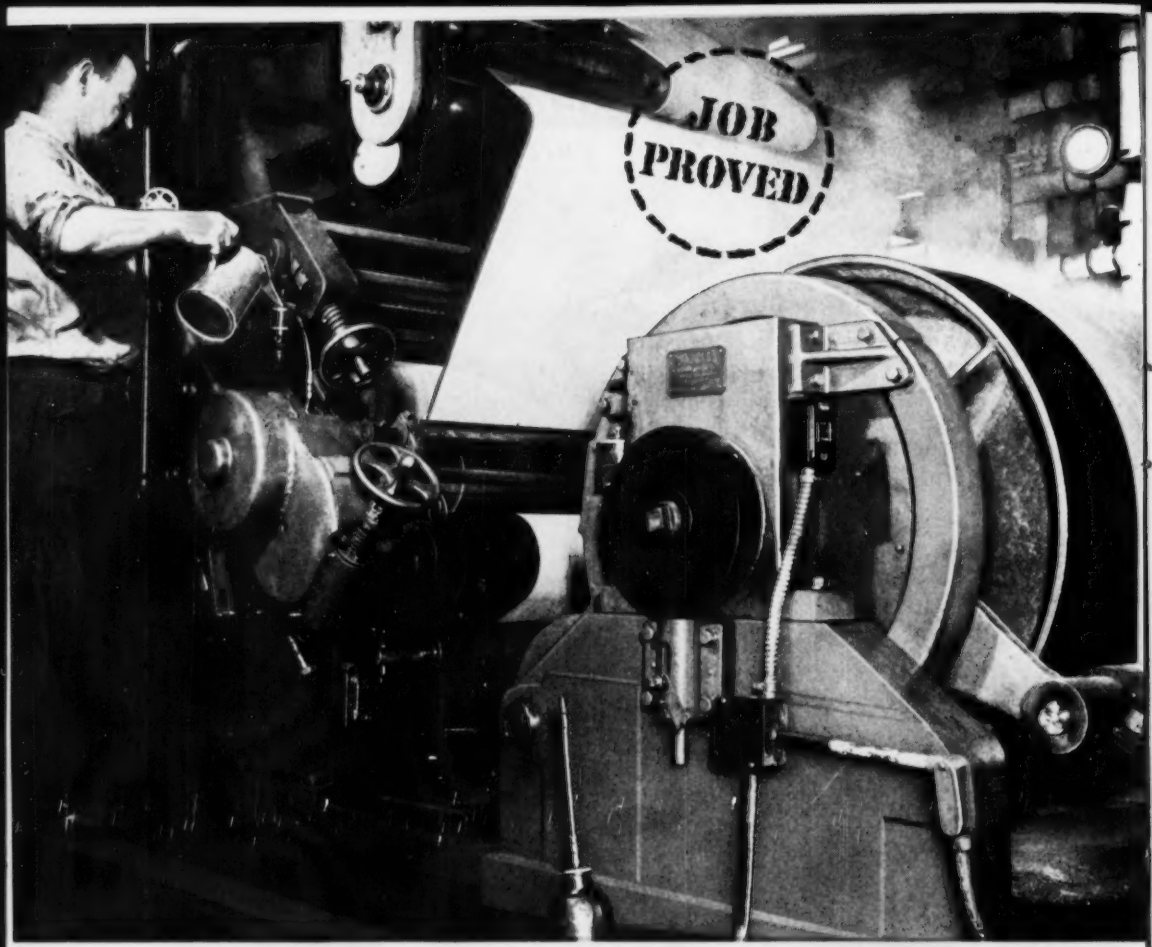
A reproduction of this incident from the fabulous life of Paul Bunyan—the fortieth of a series—will be sent on request. It will contain no advertising.



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This Kraft-paper corrugating machine produces at the rate of 250 feet a minute. Heat from the rolls causes a bearing housing temperature of 350F. Roll and bearing pressures are high. It takes a good oil to stand up under such severe conditions.

Back in 1941 the plant was using an oil not equal to the task. Hard carbon always formed, and the lubricating system clogged up. Dissatisfied with slowdowns and the continual threat to bearings, the mill changed to the recommended Sun "Job Proved" oil.

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Paper TRADE JOURNAL

MAR. 24, 1949

VOL. 128, NO. 12

CCDA Annual Meeting

Hotel Roosevelt, New York City, March 16

NEW YORK—More than 225 members and guests attended the annual meeting of the Commercial Chemical Development Ass'n. at the Hotel Roosevelt. The general meeting on March 16 was preceded by a business meeting on March 15 at which time the following officers were elected for the coming year: President, C. D. Goodale, Commercial Solvents Corp.; vice-president, F. A. Soderberg, General Dyestuff Corp.; secretary, G. O. Cragwall of Charles Pfizer & Co., Inc.; treasurer, C. W. Walton of the Minnesota Mining & Mfg. Co. The following directors were elected: J. H. Boyd, consultant, New York City; J. B. Calkin, consultant, New York City; W. H. Plummer, Indoil Co.; and A. J. Fisher, Jr., U. S. Industrial Chemical, Inc.

The Commercial Chemical Development Ass'n. was started as an informal group at an ACS meeting in Pittsburgh in 1943 by Lauren B. Hitchcock, W. H. Harding and others. It organized officially in 1947, at which time Dr. Hitchcock was elected president.

"Toxicological Safeguards in Commercial Chemical Development" was the subject of the morning symposium. The chairman, Richard W. Kix Miller, director, Product Development Department, Chemical Division, Celanese

(Continued on page 60)

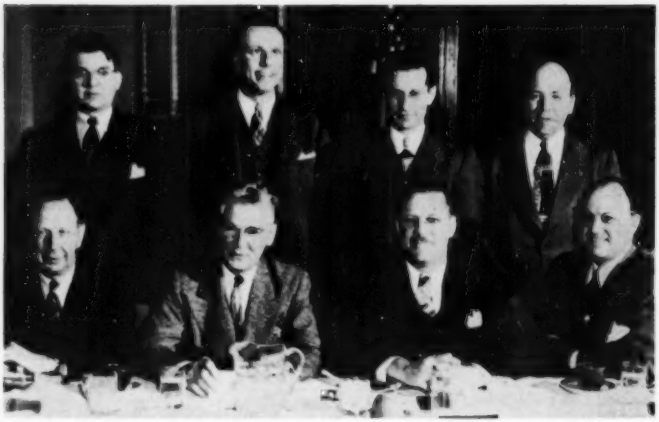
New officers CCDA. Front row, left to right: F. A. Soderberg, C. D. Goodale and J. H. Boyd. Rear row: W. B. Plummer, J. B. Calkin, G. O. Cragwell and C. W. Walton.

PAUL C. AEBERSOLD

DR. LAUREN B. HITCHCOCK

J. B. CALKIN

Ohio TAPPI Weighs Coating Procedures



Front row—left to right: S. R. Holmes, corresponding secretary; J. R. Simpson of Champion Paper & Fibre Co., and B. E. Sooy of the Gardiner-Richardson Co., panel members; Olin W. Callighan of Edgar Brothers Co., moderator. Back row: H. A. Smith, recording secretary; Phil S. Cade, chairman; Arthur Thurn, vice-chairman; R. D. McCarron, treasurer.

MIDDLETOWN, Ohio—Feature of the Ohio TAPPI meeting at Hotel Manchester, March 10, was a panel discussion on coating. Olin W. Callighan of Edgar Brothers Co., Metuchen, N.J., aced as moderator and J. R. Simpson of the Champion Paper & Fibre Co., and B. E. Sooy of the Gardiner-Richardson Co., served as panel members.

Mr. Callighan, briefly reviewing machine and conversion coating operations from the historical point of view, enumerated developments and improvements in the coating raw materials required with each step in the advancement of new and better coating equipment.

Panel Members' Talks

Mr. Simpson described the typical installation of the Champion knife-edge machine coating process. The coating color makeup equipment consists chiefly of a 400-gal. starch cooker with conventional agitation, a 600-gal. clay mixer of the Whiz type agitation, and a storage tank for the finished color.

The coater is simple, consisting of an applicator roll that revolves in a pan of the coating color, applying an excess amount to the paper and using a knife-edge to remove the excess.

At present, Mr. Simpson said, there are (exclusive of the Champion mills) 26 paper machines using the Champion type coater and 14 others in process of installation, Mr. Simpson said. When the coaters now being installed are in operation they will be used to make the following grades of paper; Bread wrapper, two; book, 12; board, 23; blanks, two; and bag, one. This makes a total of 40 in use and in course of installation.

Mr. Sooy cautioned those present to beware of two major dangers in regard to machine coating: (1) Resistance to progress and (2) complacency.

He recalled that the District of Columbia Paper Co., patented a process in 1927 that was the forerunner of machine coating applications. They were using an engraved roll to apply a pattern to the sheet, but did not develop the method to apply it to machine coating, he said.

Today there are three major coating methods, Mr. Sooy continued: (1) The champion process, whereby an excess of coating is applied and then doctored off; (2) Imprinting methods, whereby metered coating is deposited on imprinting rolls and thence to the paper; and (3) The air knife coater, whereby an excess of coating is applied and the excess blown off by an air knife.

"Mr. Simpson has described the Champion Process and I need not say any more about it," Mr. Sooy observed. "The John Waldron Syncroset coater is an example of the second method. Good points are as follows: (1) It is simple, (2) can use high solids, (3) can run at high speeds, (4) is automatic, (5) partly flexible and (6) uniform. The coat weight applied runs about 2 to 2.5 pounds per 1,000 sq. ft., or 8 to 9 pounds per ream (25 x 38—500). Disadvantages are: (1) it is limited as to amount of coat weight, (2) Involves high installation cost and (3) high maintenance cost.

"There are now four installations of the John Waldron Air knife coater," he stated. "Good points are: (1) inexpensive, (2) wire range of coat weights, (3) low maintenance cost, (4) can run high solids of 55 percent, (5) no coating pattern and (6) high speeds—1,000 ft., per min., for off the machine coating. Disadvantages: (1) No experience with on the machine coating and (2) Difficult to dry high coat weights."

Questions Asked and Discussed

(Q) Does machine coating slow down the machine very much?

Mr. Sooy: No, unless you go to high coat weights.

(Q) What effect does machine coating have on the bending qualities of box board?

Ted Sooy: This depends on how heavy a coat weight is being applied. Thin coat weights are O.K. The type of process used is also a factor.

Mr. Simpson: I agree with Ted; however, on bending a coated board will usually crack more than an uncoated one. The board furnish must also be considered.

Mr. Callighan: The degree of scoring has considerable influence on the cracking tendencies of box board.

E. K. Stilbert: The use of rubber latex as a coating adhesive or extender improves bending qualities of board.

O. R. Steffens: I agree with Jim Simpson and Ted Sooy. Certain modified starches and the use of plasticizers aid bending qualities of coated board.

(Q) What is the maximum number of coaters that have been installed on any one machine so far?

Mr. Simpson: Two coaters. Some will soon have three. This will give the sheet additional quality.

J. B. Chamberlain: We have more than two Champion type knife coaters on our machines.

(Q) Will coat weight change with change of draw?

Mr. Simpson: Run sheet loose, more coat retained on sheet; tighten draw and more coat will be scraped off. We find it best to run a snug draw or one gets a more pronounced coating pattern.

(Q) Have any mills quit off-the-machine coating and gone to machine coating because it is of equal quality?

Mr. Simpson: I know of two that have done so.

Harry Pedley: We went to machine coating kraft bag stock because of reduced labor and coating costs and improved flexibility, besides our converstion equipment was about ready to be replaced. It was worn out.

(Q) Can machine coating be applied on both sides of the sheet without drying between coats?

Mr. Callighan: Yes, one process applies the coating on both sides without drying each application.

(Q) Is it possible to make colored grades by any machine coating process?

Mr. Sooy: It can be done if there is sufficient demand.

Harry Pedley: We have made a machine coated bag stock using Canary chrome pigment as the dye.

Mr. Simpson: I have seen the difficult blue-grey coating color applied by machine with good results.

(Q) What types of adhesives are used in machine coating?

O. R. Steffens: Starches, casein, soybean protein, alpha protein, and latex + starch.

Mr. Stilbert: Casein + dextrin and starch + dextrin.

(Q) Can all adhesives be adapted to all machine coating process?

Mr. Stilbert: Hard to say. Thixotropy comes

into play when dealing with high solous color and this may limit the type of adhesive used.

N. R. Botthoffer: A special low viscosity soybean protein coating color of 55% solids is being used.

Mr. Simpson: In machine coating board, casein is the principal adhesive used because it can be easily water-proofed, and this is important because most boards are treated after coating at the calender with water boxes. Alpha protein works as well as casein in this respect. Starch can be water-proofed but it is more costly and of doubtful overall end use at present.

Mr. Stilbert: Starch and latex as the adhesive have not been tried for coating board. Some may have tried it, but to date we have no information.

(Q) Is there any reason why an air brush coated card should blacken more than a brush coated sheet when calendered?

Mr. Sooy: If the same coating color is used there will be no difference. The air brush may be superior in this respect because generally you don't have to calender it as much to get a smooth finish.

(Q) Is there any difference in the wax pick test of a brush coated sheet vs. air brush coated one?

Tom Lucy: No difference.

Mr. Simpson: As the run progresses the air brush coated sheet will have a lower pick test as the air brush classifies the clay particles, with a resultant build-up of the larger particles in the color and hence more of them staying on the sheet and consequently lower pick. Steps are being taken to correct this condition by using finer clays and better make-down methods.

(Q) How does best machine coating compare to best converted No. 1 Enamel? Halftones, etc.

Mr. Simpson: Machine coating on board is equal to off the machine coating as to printing results.

Mr. Callighan: The machine coated product of today will duplicate nearly every converted sheet excepting a No. 1 grade of book or Litho paper.

(Q) How many rolls in a Waldron Syncroset Coater?

Mr. Callighan: Generally speaking two or three trials must be made on different rolls before the correct type for a given sheet will be found. One roll with all conditions being known might pick up three pounds per side where eight pounds is needed, therefore a different roll is necessary.

(Q) What can be done to smooth the sheet prior to coating board, where the Champion process is used?

Mr. Simpson: Type of rawstock means everything. Usually there is a set of smoothing rolls before the second set of coaters. These rolls are water cooled to prevent sticking, single nip, steel or chrome plated rolls. Pressure at nip up to 100 pounds per linear inch. Diameter of bottom roll 14 inches and top 12 inches. Moisture in sheet going to coater 40-45%.

(Q) What is the moisture content in the sheet before machine coating?

Mr. Simpson: In coating board, going to the first set of coaters—50-55% dry; and going to second set of coaters—60-65% dry.

Mr. Sooy: In coating paper the sheet is dry, with only 5-6% moisture.

Mr. Simpson: In answer to a previous question, if the machine is operating at maximum drying capacity, and machine coating is installed, the first coater will slow down machine speed 3-5%, and if a second coater is installed the overall speed will be slow down 7-10%.

(Q) Is blowing (the separation of the plys) a problem?

Mr. Sooy: Yes, blowing is a problem but it has to be solved in the heater-room or at the jordans.

(Q) To install the Champion process do you have to remove any driers?

Mr. Simpson: Usually not. On stack drier board machines the coater can be installed between the stacks. With three tier driers the bottom drier is removed. This gives room for a smoothing press prior to the coating application.

(Q) Has the Champion coater been used for other types of coating, for example, greaseproof sheet?

Mr. Simpson: Yes.

GEORGE G. COBEAN

—president, Bulkley, Dunton Paper Co., S. A., the paper exporting unit of the Bulkley, Dunton organization, New York, is now in Calcutta on the second half of a projected eight-month trip around the world. . . . Purpose of his trip, begun in November, is to further expand B-D representation abroad. The organization now has over 60 foreign offices and sales representatives. . . . Mr. Cobean was joined in Manila by Phillip Crovat, president of Bulkley, Dunton Paper (Far East) Co., Inc., of Manila, and their itinerary for that leg of the trip includes visits to the Far East. . . . The two will continue to Madras, Colombo, Bombay, Delhi, Lahore, and Karachi, from which point Mr. Crovat will return to Manila. . . . Mr. Cobean will continue on to Damascus, Cairo, Athens, Rome, Geneva, Paris, Amsterdam, Stockholm, and London, returning to New York late in June or early in July.

Holyoke Hearings Resuming Mar. 28

HOLYOKE, Mass.—Paper manufacturers were notified by the Federal Power Commission in Washington on March 16 that it would resume the hearing on the Holyoke power controversy in Washington on March 28.

The F-P-C announcement came to a dozen Holyoke paper mills which had filed with the government agency as "interested parties," since a change in the status of the power situation at Holyoke might endanger their future operations.

After nearly a month of daily sessions, the public hearing that was being held here came to a halt recently when Joseph E. Hayden of the FPC legal staff moved that it be suspended.

He based this motion on the contention that the FPC representatives were charged with the responsibility of developing a clear case for the commission to judge, and that sufficient information on some phases of the municipal plan for the construction and operation of a hydro-electric development were not adequately defined.

Meanwhile reports indicated today that a united block of opposition against House Bills 1928 and 1929, dealing with giving Legislative approval to the Gas and Electric Department's proposal for a license to develop the hydro-electric potential here, has been proposed for the public hearing in Boston April 4th.

Included in this bloc would be Mayor Henry J. Toepfert, City Solicitor Joseph F. Kelly, the Executive Board of the Holyoke Chamber of Commerce, the Holyoke Taxpayers' Association, and a Manufacturers' Committee headed by Fayette F. Read, president of George W. Prentiss & Co.

Executive Secretary Conrad J. Hemond of the Chamber of Commerce today sent letters to members of the business bureau requesting them to notify him if they wish to serve on the committee that will appear in Boston. He emphasized the fact that the mayor and city solicitor should be given the role of leaders of the opposing block, but urged as many as possible to sign up. Hemond also sent out questionnaires to members of his organization to sound out their opinion on the bills.

Trucking Hike Threatened

BOSTON, Mass.—New England paper manufacturers were faced with higher transportation costs today, as Interstate Commerce Commission Examiner James J. Williams opened hearings here on the petition of New England motor freight carriers for a 15 percent increase in freight rates.

Ralph H. Cahouet, counsel for the petitioners, told the commission examiner that motor freight carriers of New England are confronted with an "emergency situation," requiring the rate boosts "across the board."

Cahouet said the emergency situation was due to rising costs of doing business, including labor costs. He added that motor carriers now were facing demands for further wage increases.

F. Frank Dickson, Jr., transportation consultant, said rates have failed to keep pace with operating costs. He declared the stability of carriers as a group had reached a point where the financial structure on the average is virtually in a state of collapse.

Forest Products Research Society Convention

Civic Auditorium, Grand Rapids, Mich., May 2-4

GRAND RAPIDS, Mich. — Some 500 leaders of all branches of the forest products industry are expected to attend the Third Annual National Meeting of the Forest Products Research Society in the Civic Auditorium, May 2-4, bringing together specialists from production lines and research laboratories.

The FPRS, which has grown to more than 2,000 members in little more than two years, includes members from a wide variety of jobs as well as all phases of the forest products industry. This Society offers a medium through which all concerned with research, production, utilization, and development of wood and forest products can come together to compare notes and work toward the benefit of the industry as a whole.

Registration will open at 4:00 p.m., May 1, in the Pantlind hotel. Registration May 2 will be at the Auditorium.

The Forest Products Industry Show will be open to the public at no charge. It will offer full-scale displays by leading manufacturers. The show will be held in the basement of the Auditorium and will be open throughout the three-day meeting. Details of the show are being handled by Alexander H. Stuart of the John Widdicomb Co., Grand Rapids.

Field trips have been arranged for the afternoon of May 3, to several of the plants in and around Grand Rapids.

Arrangements for the meeting are in the hands of FPRS President George A. Garratt, dean, Yale School of Forestry; Program Chairman Edward G. Locke, chemical engineer, U.S. Forest Service, Portland, Ore.; and General Meeting Chairman Jac. H. Tigelaar, director of research and tests, Haskelite Mfg. Corp., Grand Rapids. This meeting is open to all. Additional information regarding the meeting or the Society can be had by contacting the office of the secretary-treasurer, Box 2010 University Station, Madison 5, Wis.

Vancouver Forest Engineers Meet

VANCOUVER, B.C.—Members of the Vancouver Section of the Canadian Society of Forest Engineers held their annual meeting at Hotel Vancouver, recently, were told by R. D. Gregor, head of the forest ranger school operated at Green Timbers by the B. C. Forest Service, that forest management licensing operations and the science of maintained yield in British Columbia both depend on bringing the fire hazard under control.

"If private enterprise is serious in its desire to practice sustained yield, it should show its intentions by developing fire protection on areas now being operated," Mr. Gregor said. "There is astounding inefficiency and confusion when fires occur."

Eustace Smith, dean of timber cruisers in British Columbia, predicted that future logging in British Columbia will be carried out with light machinery in new growth areas traversed by permanent roads. He believes that smaller trees will be cut on the average and harvested on the basis of annual yield. He does not favor selective logging of the remaining stands of mature timber.

Mr. Smith, now a consultant in Vancouver, was one of 12 children of a homesteader who came to Comox in 1887. As a youth he helped skid logs by three-yoke ox teams and horses, worked as barker, sniper, faller and bucker, and then became a timber cruiser. He scored as false the belief that capitalist buccaneers staked the timber limits, and made fortunes out of the people's forest heritage.

Mr. Smith recalled that enormous losses were sustained by the early stakers, who took out licenses permitting cutting and carrying away of timber. They paid an annual fee of $140 a section plus other tolls for decades. Many licenses were dropped. He estimated about one-third of the stakings were logged.

"I would judge the government still holds 60 percent of accessible forests and has control of the remainder, except the Esquimalt & Nanaimo Railway belt, and a small percentage of old Crown grant lands," said Mr. Smith.

"Some holdings were profitable but I doubt if, considering all the money made by the government and the interest on investment, any money was made (by licensees)."

It was reported at the convention that the B. C. Forest Service now operated more radio sets than any similar service in Canada for spreading weather information, but that individual loggers still did not get enough data. The conference passed a resolution urging a radio broadcast daily by the Forestry Department during weather when fires occur. The forest engineers asked for a comprehensive picture of humidity, temperature and wind, which would be broadcast on the standard band daily by all radio stations.

Reporting for the society's standing committee on protection, Chester Mathieson told of new gadgets devised by companies to fight fire.

At Northwest Bay, he said, the operating company built 14 small trailers fitted with shovels, picks, and pump motors, that can be hooked to the rear of logging trucks and speeded to a fire scene.

Another device is a metal frame pre-loaded with fire-fighting apparatus for 50 men. The frame, raised from the ground, fits the standard logging truck.

A fire-lookout school has been established at Green Timbers station of the B. C. Forest Service, and will offer a ten-week course this summer for forest-protection workers.

Mr. Mathieson said great care is being exercised in the use of DDT spray to control insect pests. In the Windermere Valley, 11,000 acres have been sprayed to kill the false Hemlock looper.

Pest fighters find that DDT sometimes upsets the balance of nature by killing off the parasites that control tree-killing pests, destroys the bees that pollinate, and wipes out the insects that feed fish and birds.

Fire hazard from the abandoned "slash" left by loggers is being greatly reduced because much timber that once was left as slash is now saleable.

Other speakers on the program and their topics were: J. A. Alexander, "Growth and Yield Studies in B. C."; P. A. Briegleb, "Applied Forest Management in the Douglas Fir Region"; and Edward Heacox, "Forest Inventory Procedures."

46th NPTA Convention

NEW YORK — The program of the 46th Annual Convention of the National Paper Trade Ass'n., to be held at Hotel Waldorf-Astoria, April 4-6, as reported by A. H. Chamberlain, executive secretary, is as follows:

April 3

Headquarters and Registration Desk
Flamingo Room
Meeting of Executive Committee
2:00 PM, Pillement Suite

April 4

Headquarters and Registration Desk
Basildon Room
Fine Paper Commodity Committee
10:00 AM, Pillement Suite
Wrapping Paper Commodity Committee
10:00 AM, 4 J-K
Cocktails

12:00 Noon, East Foyer
Guests of Honor
12:30 PM, West Foyer
Luncheon
1:00 PM, Grand Ball Room
Speakers: Hon. Francis J. Myers, U. S. Senator from Pennsylvania; Rev. Fred Pierce Corsen, Resident M. E. Bishop, Philadelphia.
Conference of Local Association Officials and Counsel
3:00 PM, 4M
Fine Paper Governing Committee
4:30 PM, Pillement Suite
Wrapping Paper Governing Committee
4:30 PM, 4 J-K
Board of Directors
8:30 PM, 4 M

April 5

General Industry Session
(open to manufacturers and guests)
President Ralph G. Luff, presiding
10:00 AM, Jade Room
Speakers: D. C. Everest, president, Marathon Corp.; E. W. Tinker, executive secretary, American Paper & Pulp Ass'n.; R. S. Alexander, professor of marketing, Columbia University School of Business.
Fine Paper Division Meeting
2:00 PM, Jade Room
Vice-President L. A. Ramaker presiding.
Statistical Reports, J. H. Londergan. *Speakers:* George Olmstead, Jr., president, S. D. Warren Co.; John D. Zink, vice-president, Hammermill Paper Co.; Arch Crawford, president, National Assn., of Magazine Publishers.

April 6

Wrapping Paper Division Meeting
10:00 AM, Jade Room
Vice-President L. S. Pollock presiding.
Statistical Reports, J. H. Londergan. *Speakers:* "Vanishing Margins" C. J. Slickden, Chas. F. Hubbs & Co.; "Who's Going to Take Your Job?" H. C. Lawless, Jr., Union Bag & Paper corp.; Committee Reports, W. G. Leathers.
Annual Meeting
2:30 PM, Jade Room
President Ralph G. Luff presiding.
Report of Board of Directors, Report of the Treasurer, Necrology, Report of Traffic Committee, Address by Congressman J. K. Javits, Nomination and election of officers, Adjournment.

Tax Text Ambiguous

KETCHIKAN, Alaska—Under the Territorial Property Tax recently passed by the Legislature, the Ketchikan Pulp mill would pay a tax estimated to be three times what the same company pays in the State of Washington.

The Property tax provides for a ten-year moratorium of up to 50 per cent of the property tax, levied at the discretion of a tax commissioner and assessment board. Although Attorney General Rivers claims this exemption to be legal under the organic act, there is a distinct difference of opinion among legal heads in Alaska and the States.

It is doubtful if the Legislature has the power to delegate taxation to any person or body, according to opponents of the exemption. Should this be true, the pulp mill may be liable to the entire one percent assessment, which based on full value assessment, would amount to an annual tax of $330,000, more than six times the amount paid by the same concern for it's Bellingham, Wash., plant.

Clark Addresses TAPPI Div.

GLENS FALLS, N. Y.—"The Application of Vacuum Pumps Industry" was discussed March 16 by C. L. Clark of the Clark-Vicario Co., New York City, when he addressed 70 members of the Hudson River Division of Empire State TAPPI at a dinner meeting in the Village Inn, in South Glens Falls.

Mr. Clark answered individual questions on the problem of removing water on the paper machine. With machines running at faster speeds, he said, the quantity of water to be removed is increased not only because of the speed but also because of additional water added to obtain the desired formation on the wire.

Some high speed paper machines, he explained, now use as much as 30,000 gallons per minute on the Fourdrinier wire. After initial drainage in the paper rolls, the water enters the No. 1 suction box at from one to three percent consistency, Mr. Clark continued, and leaves the final suction box at approximately 12 percent consistency.

Thus the speaker pointed out, in large machines 4,000 to 5,000 gallons per minute are removed by suction boxes. This volume calls for both wider and deeper suction boxes with larger discharge pipes rather than the addition of more suction boxes. Failure to use these larger boxes, Mr. Clark warned, results in uneven wet spots in the sheet. It may also produce water in the central valves which distribute the graduated vacuums on the individual suction boxes.

Mr. Clark said the paper web should leave the suction couch at from 18 to 22 percent consistency. For speeds below 1,000 feet per minute, only enough vacuum is required at the suction presses to remove the small quantity of water squeezed out at the nip of the rolls. For speeds above 1,000 feet per minute, it is necessary to maintain as much as 22 inches of vacuum to prevent water from splashing and wetting the sheet.

The speaker explained the action of felt conditioners in maintaining clean felts. Mention was also made of application of as much as five inches of vacuum in a new type of vacuum cylinder mold.

New pressurized head boxes require the elimination of entrapped air which may run from one and one-half to five percent by volume in ordinary newsprint, Mr. Clark added. When this air is removed the fibres will be much better dispersed in the sheet.

A new rubber belt rotary suction was described as being very useful in increasing the speed of wallboard being produced on the Fourdrinier wire.

Flannery Surveys Scrap Scene

CHICAGO—James T. Flannery, of Jersey City, N.J., newly elected president of the National Ass'n., of Waste Material Dealers, Inc., speaking on March 21 at the Annual meeting of that organization here, said in part:

"The generation of scrap dealers that preceded us were pioneers. They taught industry to save their so-called waste. In turn, they also had to teach consuming industries how they could best utilize this material to replace other raw materials. In the next period, when Europe was being ravaged by war, there was a desperate need for every ounce of material. The greatest source of above-ground resources was the collection and utilization of scrap material. After the first chapter of chaos in which everybody tried to "get into the act" it was found that the scrap industry was prepared to take care of this Herculean task and the tonnages collected, processed and made into the sinews of war are now a matter of history.

"The industry, however, now finds itself in the third period, which I shall call "Preservation of Natural Resources". The hue and cry for the utilization of scrap has died down. We are again expending our natural resources as if they are limitless. We are again . . . cutting down too much of our forests for our wood-pulp . . . Scrap that can take the place of these natural resources is again being forgotten and allowed to accumulate in our warehouses and lost to posterity when our warehouses are filled. Scrap that is allowed to be unused while some natural resource is used is a crime against our future generations. 'Now is the time to Conserve'. Now is the time not only to use scrap for every purpose that we know of, but to find constant new usages. This must be done now with the full cooperation not only of our Industry, but with the full cooperation of Government and Industry as a whole, as well."

Hydraulics Lab Dam Study

OTTAWA—Diversion of logs from the entrance of a power canal is being studied in the hydraulics laboratory by means of a model dam and storage basin, the National Research Council of Canada has reported here. Experimental work includes studies of trial positions for the log chute in the dam, and selection of the best types of protection booms.

CROSSETT PERSONNEL FACILITIES BUILDING

Crossett Paper Mills has opened its newly completed employe's facilities building erected by the Rust Engineering Co. . . . The building exterior is of brick, with large areas of glass. The interior walls are tile. . . . An individual steel locker is provided for each worker who desires one, and there are ample shower and washing facilities. . . . The structure is a part of the major expansion program of the mill scheduled for completion in 1950.

Paper Furniture

CHICAGO — The Armour Research Foundation has developed a new technique for making furniture from woodpulp. Combination backs and seats for chairs have been produced in one piece in a pilot plant.

Wood pulp similar to that used in paper mills is put in a beater and broken down. The beaten pulp is placed in a felting tank and diluted with water. Suction draws the pulp fibers to a die which is covered with a fine screen and shaped like the back and seat of the chair. The fibers accumulate on the screen in the shape of the die and build up to the desired thickness.

The die is removed from the tank and the mat of fibers that has formed on it is lifted off by compressed air. The mat — called a preform — is then dipped in a resin solution until saturated, when it is cured in an oven. If a smooth finish is wanted the preform can be put in a hydraulic molding press and subjected to pressure and high temperature. The result is a one-piece back and a seat that can be made into a complete chair by fastening it to a one-piece metal leg unit with screws.

It is stated that a whole chair could be made by the same method, says Layton C. Kinney, supervisor of chemical engineering research. "It's largely an automatic process — a step in the direction of an automatic factory."

Dr. Louis Koenig, chairman of the Chemical Engineering Research Department, says that by the new process chairs could be turned out "by the hundreds with only a few operators."

Rigid Insulating Board

OTTAWA—Production of rigid insulating board industry advanced to 20,154,793 sq. ft. during January, 1949, compared with 16,813,554 in January last year and 21,098,436 in December, 1948, with the production for the 12 months of 1948 totaling 220,684,241 sq. ft. as against 203,091,237 in 1947, according to the Canadian Government.

Domestic sales moved up to a total of 19,557,418 sq. ft. in January, 1949, compared with 14,338,561 a year ago January and 20,724,276 in December, 1948, with the output for the 12 months of 1948 totaling 189,814,917 sq. ft. compared with 160,319,897 in the whole of the previous year.

Such domestic sales in January, 1949, showed the following, with figures for January, 1947, in brackets: Panel Board, 14,293,120 (10,133,961) sq. ft.; Plaster Base Board, 2,005,396 (1,478,354); Roof Board, 1,901,396 (1,923,917); Miscellaneous Board, 1,357,506 (802,329); Total, 19,557,418 (14,338,561).

Domestic sales during the 12 months of 1948 were as follows, with 1947 figures in brackets: Panel Board, 133,229,194 (105,514,330) sq. ft.; Plaster Base Board, 18,770,055 (16,563,514); Roof Board, 25,447,757 (22,017,882); Miscellaneous Board, 12,367,911 (16,224,171); Total, 189,814,917 (160,319,897).

In-the-Field Workships

STEVENS POINT, Wis. — Beginning this spring and continuing in the fall of 1949, a series of in-the-field workshops for high school students will be offered at the Trees for Tomorrow Conservation Camp at Eagle River.

Prof. F. J. Schmeeckle, chairman of the committee of educators who have worked out details of a plan following four years of experience in conducting field institutes in the summer and conservation seminars in the winter, said the objectives of the workshop are: (1) To provide, in the brief period of 2½ days, learning experiences that many students do not receive during four years of high school. (2) To bring about among our citizens of tomorrow, a more specific understanding of the social and economic significance of our natural resources.

Members of the Educators Committee are: Ray Gilbertson, P. J. Jacobs High School, Stevens Point; Clarence Wentland, County Supervising Teacher, Oneida County; Steve Knezevich, Principal, John Edwards High School, Port Edwards; and W. S. Corlett, forester and manager of the Trees for Tomorrow Conservation Camp. Cooperating agencies, who will furnish instructors are U.S. Forest Service, State Conservation Dept., Central State Teachers' College and Trees for Tomorrow Inc.

ACCL Meet March 26

SAN FRANCISCO—The Western Division of the American Council of Commercial Laboratories will hold its annual meeting here on March 26. Dr. Roger W. Truesdail, president of Truesdail Laboratories, Inc., Los Angeles, is the chairman of the Western Division; vice-chairman is Herbert D. Imrie, president of Abbott A. Hanks, Inc., San Francisco. The meeting is to be held at the offices of Abbot A. Hanks, Inc.

Packaging, Packing Parley

NEW YORK—A National Conference on Packaging, Packing and Shipping will be held concurrently with the first three days of the American Management Association's National Packaging Exposition in Atlantic City, May 10-13. Information about these meetings can be procured from the American Management Ass'n., 330 West 42 street, New York, N. Y.; attention of Edward K. Moss.

Benelux Duty Changes

OTTAWA — The Benelux countries (Belgium, The Netherlands and Luxembourg) have continued to suspend or reduce the duties on a number of commodities until December 31, 1949, including newsprint the normal duty on which (ad. val.) was 10 percent, reduced to 6 percent, according to the Foreign Trade Service, Department of Trade and Commerce, Canadian Government.

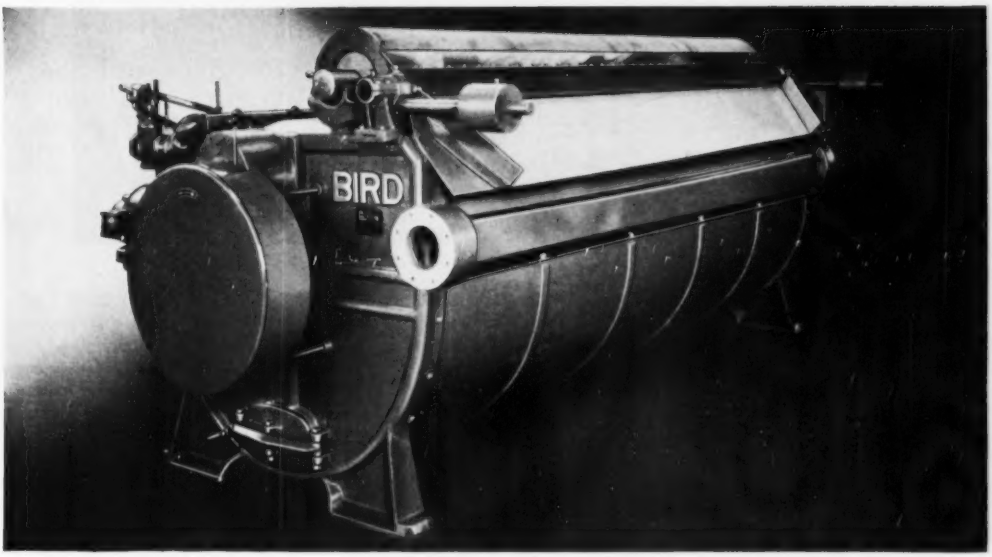
India's Paper Imports Drop

NEW DELHI—India imported 25,700,000 rupees worth of paper and pasteboard in the April to August period of 1948 compared with 82,400,000 rupees in the same period of the previous year, Richard Grew, local commercial secretary for Canada, reports to his government.

Peace Prospers Production

OTTAWA — There was no time lost through labor disputes during January, 1949, in the pulp and paper products manufacturing industries, according to a report just issued by the Labor Department, Canadian Government.

THIS BIRD SAVE-ALL PAID FOR ITSELF *in 19 weeks*

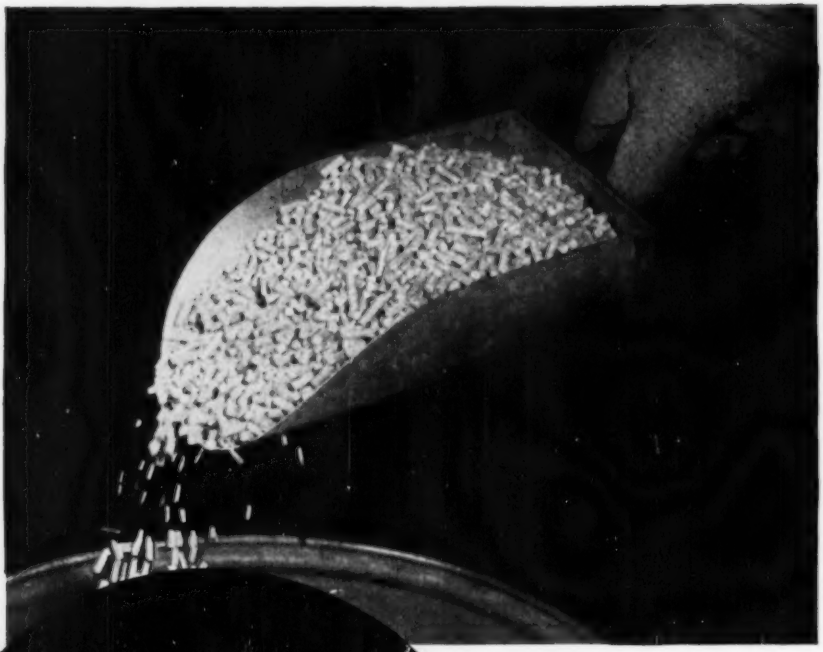


Its user, a maker of specialty papers, carefully figured the gain in yield after installing the Bird Save-All, translated it into dollars, and figured it owed him nothing after a little over four months of operation.

Immediate and substantial return on your investment in a Bird Save-All system of fibre recovery is virtually certain and is readily calculable in advance. In addition it puts the water in shape for re-use and makes it easy and economical to treat any excess water before final disposal.

If your paper machine still poses a white water problem, let us make recommendations and estimates on the Bird Save-All system that will produce the highest net return for you.

BIRD MACHINE COMPANY
SOUTH WALPOLE • MASSACHUSETTS



Now Available In pellet form Dowicide G

Now you can obtain Dowicide G in *pellet form!* These new, hard pellets have only one-fourth the volume of the original flake! That means *easier handling, less dust* in the application of this superior industrial germicide and fungicide. From raw wood to the finished product, Dowicides are helping the pulp and paper industry cut losses due to mildew and rot. *Dowicides reduce waste* caused by mildew on lap stock in storage, by deterioration of paper board in humid warehouses, by dry rot in pulp wood and they prevent mold in starches, casein, glue and other decomposable adhesives. Find out now about the new, pellet form Dowicide G. It's easier to handle, minimizes dust during application. Contact your nearest office or write direct to Midland.

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W. C. Hamilton Starts No. 7 Paper Machine System

By EDWARD M. ROOT

Sales Manager—Dilts Machine Works, Fulton, N. Y.

W. C. Hamilton & Sons Co., Inc., of Miquon, Pa., has recently placed in production its new No. 7 paper machine, marking another milestone in the 92 year old history of this outstanding company. The production of this mill totals about 140 tons per day of fine papers such as bonds, ledgers, offset, papeteries, text, wedding, map, blueprint, writings, meter, and specialties.

Designed to produce 50 tons per day of fine papers, this newest member of the Hamilton family has already produced 61½ tons in a 24 hour day.

The wire is 121 in. wide by 70 ft. long and is equipped with a 26 in. suction couch. The press section includes a suction first press with a 24 in. roll, a plain second press, followed by a smoothing press.

The dryer section is in two nests, the first having forty 48 in. dryers and the second containing nine 48 in. dryers, with a size press in between.

The finishing end has a seven roll calender stack followed by reel and winder and a combination layboy and cutter. The ten-section electric drive has a rated speed of 750 f.p.m.

However, let us start at the beginning and work forward in proper sequence. The pulp furnish is made up and fed directly into a Shartle-Dilts batch type hydrapulper, 14 ft. dia. which gobbles whole bales of pulp and broke and yawns for more. After a few minutes of this, the stock is delivered by an 8 in. type DS Shartle-Miami stock pump to either of two 2,500 lb. hydracycle tanks or alternately by way of three Shartle-Dilts No. 1 hydrafiners which are piped up in a series-parallel arrangement, permitting operation of the system with any one or more units as necessary. The hydrapulper is equipped with a 150 hp. motor and each hydrafiner has a 200 hp. motor. Each hydrafiner is also equipped with a remotely controlled, electro-mechanical plug adjusting mechanism.

After the stock has been pulped and delivered by way of the hydrafiners to one of the hydracycle tanks, it is circulated by the batch method around through the hydrafiners and back to the same hydracycle tank the number of times required to develop the strength of the fibers by hydrafining the stock to the desired degree.

Each hydrafiner tank has an inside diameter of 10 ft., is 19 ft. in height and is provided with a midfeather. The bottom portion of each tank is a conical section with a variable pitch propeller agitator located in the midfeather at the bottom. This arrangement permits the agitator to "stand by" during the refining cycle.

Stock returning to the tank from the hydrafiners is spread over the top of the stock already in the tank by means of a spreader and, thus stratified, entering stock works its way to the bottom as the stock below is withdrawn. In this way no intermixing of the stock takes place during the refining cycle and the papermaker is assured of each fiber receiving the same amount of treatment.

This is known as non-selective refining as opposed to selective refining as in beaters, in which equipment the papermaker has no assurance that all fibers are receiving the same treatment.

Fig. 4 is an interior view of the hydracycle tank, with the midfeather and agitator visible.

Following the refining stage, during which time another batch has been slushed in the hydrapulpers, certain valves are re-positioned and the next batch is delivered from the hydrapulper to the other hydracycle tank. The hydrafiners may now begin their work on the new batch without a shut-down, unless the capacity exceeds requirements in which case they may be shut down until needed.

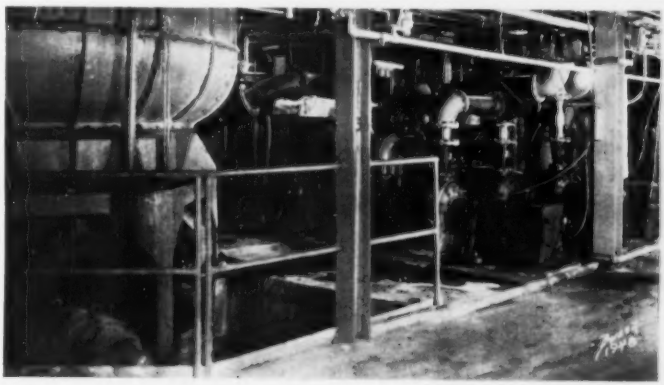


Figure 1. Bottom of Hydrapulper at left. Hydrafiners at right.

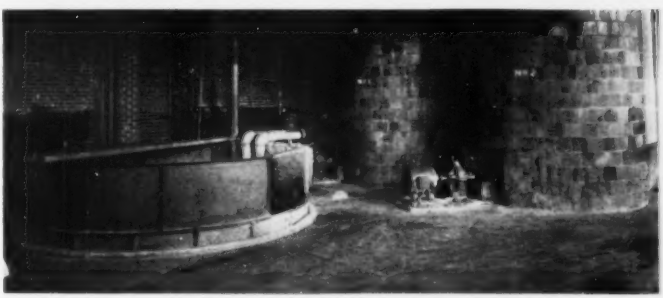


Figure 2. Top opening of Hydrafiner at left, Hydracycle tanks at right.

Figure 3. Mezzanine, or operating floor, one story above the machine room level. There you see the tops of the Hydracycle tanks and the remote control panel installation.

The stock in the first tank is now ready for the addition and mixing of the various chemicals that go into the furnish. The propeller agitator is started, the chemicals added and the stock is circulated over and under the midfeather until, in a matter of seconds or minutes, the thoroughly blended "stuff" is ready to be dumped into the machine chest.

An interesting feature in this connection is the intermixing slots in the midfeather of the tanks which short-circuit some of the stock during the blending operation, thereby providing a most efficient intermixing and blending of the chemicals and fiber.

Dilution to a consistency below the refining consistency of 5 percent for jordanning can be brought about at this stage of the process, if desired.

Of particular interest in connection with this new and thoroughly modern installation is the remote control panel shown in Fig. 3 This is the very heart and soul of the system.

From this vantage point one operator has complete control over the entire stock preparation operation from the moment the raw material is fed into the hydrapulper until it is pumped to the jordan headbox at which point the papermaker takes over.

Aside from the manpower required to feed the hydrapulper, one operator runs the entire system. He starts and stops the hydrapulper, operates the pump to deliver the pulp to the refining system, controls the hydrafiners and the blending stage, and does it all without moving more than 25 feet from his electrical "assistant."

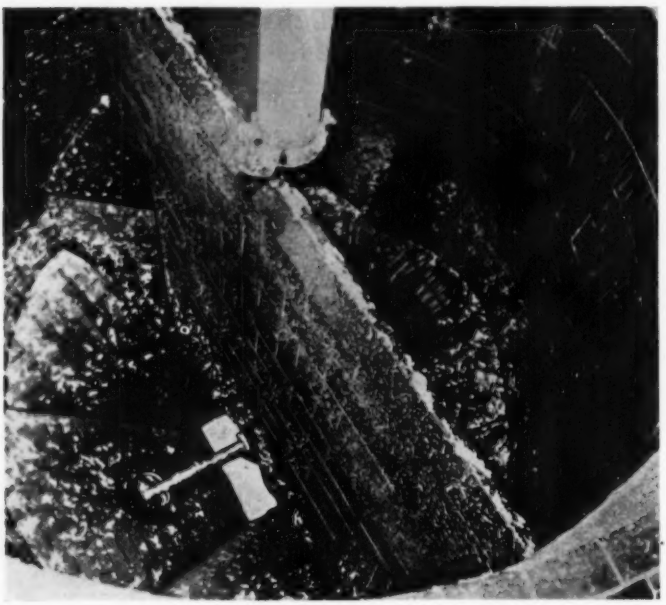


Figure 4. Interior of Hydracycle tank, with midfeather and agitator visible.

All motors are also operated from the control panel, including the motors which operate the hydrafiner plug positioning mechanism. All electrically operated valves are likewise controlled from the panel, which also contains the indicating and recording ammeters that show what the equipment is doing as well as charting a permanent record for future reference.

The addition of white and fresh water make-up for the hydrapulper and for dilution at the hydracycle tanks, if required, is also controlled from the panel. Liquid level recorders show the amount of stock in the hydracycle tanks and in the machine chest.

Knowing the dry weight of the material furnished to the hydrapulper, the operator thus has complete control of the operation and can deliver a uniformly refined stock at a closely regulated consistency to the machine chest.

Better systems will inevitably be devised as progress continues in the industry, but, for batch preparation of stock for grades such as are being produced at this quality mill, number 7 system has all the basic elements required for highly successful operation.

The paper machine chest, of Shartle-Dilts design, was constructed of Stebbins tile, as mentioned previously. It is a horizontal, three channel, Agi-flo type of chest equipped with a Shartle-Miami 16L-5HM combination agitator and centrifugal stock pump. The mill is thus assured of uniform agitation of the stock in the chest irrespective of the level of the stock therein and, at the same time, delivery of a constant flow to the headbox ahead of the jordans.

The jordan headbox is tied in with a consistency regulator for final absolute consistency control ahead of the jordans. One jordan is equipped with a 300 hp., 450 r.p.m. motor and the other with a 200 hp., 360 r.p.m. motor. The jordan piping permits either series or parallel operation.

From the jordan the stock is routed through the necessary screens and on to the headbox and slice of the paper machine. Thus we are back to our starting point.

Mention should be made, however, of the fact that return water from the

paper machine is clarified for re-use before being returned to the system.

All the equipment manufacturers and suppliers who had a hand in the expansion of the facilities at this mill are justly proud of their respective contributions. W. C. Hamilton and Sons are to be congratulated on their vision and their confidence in the future of their organization and the industry. The three Hamilton gentlemen who are doubtless more responsible than anyone else in the organization for the successful completion of this development are shown in Fig. 5. They are, H. H. Hanson, president; Lane Taylor, vice-president and treasurer; and, appropriately enough in his shirtsleeves, James L. Grauel, chief engineer.

Each of these men played his own very important part, as did literally hundreds, yes thousands of others, in the W. C. Hamilton family and in all the other organizations directly and indirectly concerned in the expansion of a great mill—certainly a big step forward in the continuing progress of W. C. Hamilton and Sons and the paper industry.

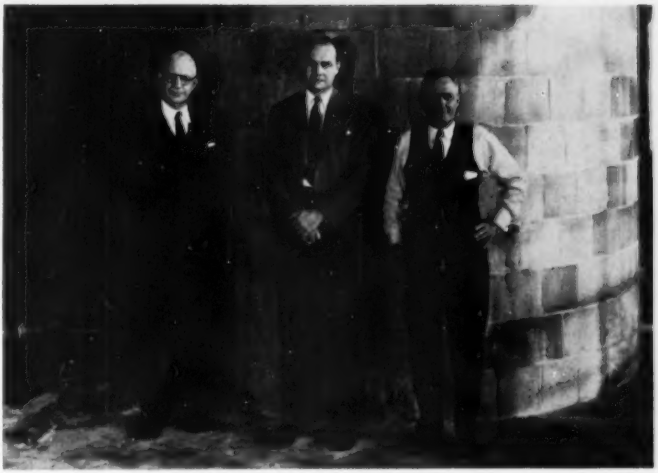


Figure 5. (Left to right) H. H. Hanson, president; Lane Taylor, vice-president; James L. Grauel, chief engineer.

Capital Expenditures Now?

By KURT H. SIECKE
Consulting Engineer, Portland, Ore.

The well known maxim — "Experience is the best teacher"—is a guide to the management policies of all conservative organizations and is adopted by most business forecasters who predict the future by making a close examination and analysis of the past. The financial magazines and newspaper columns carry countless charts depicting the analyst's opinion as to the time element and trend of the business cycle, which may possibly have considerable value if based upon adequate study of related conditions, but seldom is applicable to a specific industry or problem.

Nevertheless, the publicity which has been given to information of this kind and particularly to the rise in costs of production, market prices, and all items entering mill maintenance and modernization, has led to the belief that it is a wise policy to postpone all expenditures of a capital nature "until costs come down." If this policy applies to a static commodity which is bought for re-sale, it is obviously necessary to buy low (and who has the wisdom to recognize low?) in order to sell at a profit, in which case it would indeed seem inadvisable to buy on the present market, since a further considerable rise in values is hardly to be expected.

But expenditures for adequate maintenance and plant improvement are not in this category, as evidenced by the manner in which some of the first ranking manufacturers of pulp and paper have continued to assign funds to these purposes. In the discussion which follows, I expect to prove the soundness of their policies and to show that it is very unwise for any organization which hopes to continue in profitable operation in competition with new or modernized mills to await the return to a former scale of values.

One must bear in mind that a drop in equipment and construction costs great enough to have any significance in its effect upon manufacturing costs would be accompanied by a general de-valuation which would have a most destructive effect on mill earnings. Furthermore, under such conditions, the management which has neglected maintenance and postponed modernization to a more propitious time, will find that its reduced earnings are inadequate to do these things even at the lower costs anticipated.

Superintendents and operating personnel are sometimes placed in a difficult and rather unfortunate position by being required to maintain profitable operation of an old mill, containing worn out or obsolete equipment, poorly arranged by modern standards, in competition with the newest plants and processes which are continually coming into production. It may sometimes seem from an accounting standpoint that the favorable position of a long established plant by reason of its lower fixed charges, outweighs the higher cost of operation and the inability to maintain high standards of quality.

Actually, I believe that the idea of lower fixed costs is deceptive and that managements of older mills should subject their fixed charges to searching analysis, which in most instances will show that many items such as taxes; administrative and selling costs; indirect salaries

The first of two articles on this subject by Mr. Siecke.

Table I

Estimated Cost Completely Integrated 200-Ton Kraft Mill

	Buildings	Equipment	Total
Site	.....	.....	$100,000
Wood preparation	$191,000	$396,000	587,000
Kraft pulp mill	461,000	1,011,000	1,472,000
Stock preparation	335,000	523,000	858,000
Paper mill and shipping	580,000	2,005,000	2,585,000
Electrical	.....	1,291,000	1,291,000
Piping	.....	750,000	750,000
Steam Plant	250,000	890,000	1,140,000
Miscellaneous	.....	.....	895,000
Estimated total cost			$9,678,000

and wages; and maintenance costs have automatically increased. Furthermore, unless coverages are increased, insurance will not provide adequate protection, nor will former reserves for depreciation, obsolescence, or depletion provide replacement as need arises.

Even taking today's high construction costs into consideration, an old mill cannot compete in the long run with a new plant unless adequate expenditures for modernization are made from time to time. Managements of such mills are undoubtedly often in a quandary as to the extent of necessary modernization, but unless improvements are frequently made, I am afraid that they are showing a favorable operating profit at the expense of depleted capital value, and their companies are imperceptibly slipping behind.

While today's prices are probably established on the basis of accurate cost accounting methods by the largest producers, which may be assumed to be absolutely sound, it must not be overlooked that the operating costs of these key mills are definitely lower than the cost of operating the marginal mills, because the former use the latest equipment and most up-to-date methods, and they employ carefully selected personnel, adequate technical staffs, and highly efficient purchasing. Furthermore, the very largest organizations have the financial ability and other resources to own their own standing timber on a sustained yield basis; conduct their own logging and log transportation; and operate integrated mills which in some instances include the full range of pulp and paper manufacture, and conversion into a full line of specialties.

One may say that with a return to more competitive conditions the very existence of the independent mills will in the future depend upon their ability to operate competitively as the market prices of paper products soften. Present attention to mill improvements must therefore be considered an absolutely necessary part of sound management policy, and in view of tax requirements it would seem that the current cost of such improvements is not so high as to eliminate their consideration, especially so long as new mills are being built.

The following cost figures for a modern 200 ton kraft mill for producing wrapping grades definitely show that such new construction as has taken place is entirely sound at present market prices, or those which seem likely to prevail in the foreseeable future, particularly as these new mills include the most modern high production low operating cost equipment. These figures, are based on construction costs some 80 percent higher than 1942 and equipment costs approximately 160 percent of those prevailing when price controls were lifted.

Obviously, without entering into a more detailed description and analysis of these figures than the present purpose justifies, they have no particular value in themselves, but do represent a satisfactory basis for calculating some of the items entering the following production cost figures which serve to justify recent mill construction even assuming a contingent reasonable downward readjustment of the present price structure.

Production cost figures have seldom been published in detail, probably for the reason that they are so definitely related to the individual mill, its methods, and its product that they are not considered to have any general significance. On the other hand, the competitive features of the industry make it impossible for any mill management to disregard the cost of production of the strongest, most efficient manufacturers who will find it possible to continue operations under almost any market situation at a temporary financial sacrifice in order to earn total fixed charges.

The steam and electric power costs appearing above apply to the situation in the Pacific Northwest where fuel oil and wood-refuse are available for fuel and where the cost of electric power generated by a privately owned extraction-back pressure steam turbine unit may exceed that of purchased electric power depending upon the mill location, the contract terms, and the mill cost accounting methods. Also, steam is produced by a kraft mill recovery unit using concentrated black liquor fuel, and the paper machine is driven by a back-pressure steam turbine supplying low pressure steam to the dryers in the example given.

An examination of the figures in Table III discloses that fixed costs form a considerable proportion of total cost of production, which is of course true of any industry which requires a very large investment in plant facilities per dollar of annual revenue. They also explain the importance of maintaining continuous production at a maximum possible rate and point to the objections to small orders, short runs, and changes in grade.

Assuming continuous operation, and a consequent annual production of about 50,000 tons selling at from $140 to $155 per ton, the income from sales is $7,350,000, and a reasonable return from subsidiary operations should bring the total annual income to $8,175,000. The total cost of the plant site, equipment, and machinery is estimated as $9,678,000 and while a definite value for wood lands is difficult to obtain, a reasonable figure for continuous yield would be ¾ to 1¼ billion board feet whose value is dependent upon many factors but would

Table II

Manufacturing Cost Direct Costs per Ton 200-Ton Kraft Mill

	Wood Preparation	Mill & Screening	Beater Room	Jordans and Paper Machines*	Total
Labor	$2.09	$2.87	$2.59	$3.26	$10.81
Raw Materials	50.83	5.90	..	.....	56.73
Steam	.46	2.73	.25	6.73	10.17
Electric Power	.32	.15	.65	4.63	5.75
Water Supply	.03	.49	.....	.11	.63
Repair Materials	1.17	1.54	.22	2.13	5.06
Repair Reserve	.....	.44	..	.....	.44
	$54.90	$14.12	$3.71	$16.86	$89.59

* Product machine finished including trucking & handling.

Table III

Summary
Total Manufacturing Cost
200-Ton Kraft Mill

Direct Costs—		
Woodmill and chipper including logs	$54.00	
Pulp mill and screen room	14.12	
Beater Room	3.71	
Paper machines, jordans, and shipping	16.86	
		$89.59 per ton
Indirect Costs—		
Manufacturing burden	12.93	
General engineering and maintenance	2.05	
Depreciation and obsolescence	8.27	
Taxes and insurance	8.56	31.81 per ton
Cost per A. D. Ton M. F. Counter Rolls		$121.40 per ton
Freight Allowance		15.00 per ton
Total manufacturer's cost		$136.40 per ton

probably not exceed $12,500,000 or a value about one-third greater than that of the plant. On that basis the capital turnover is $22,178,000 divided by $8,175,000 or 2.71 which indicates the turnover of capitalization in total sales every two years nine months, a period far longer than that applying to the depreciated value of a long established mill under present high prices for paper and pulp.

Another significant index of successful operation is the ratio of operating expense to total income, called the "Operating Ratio." For the assumed conditions, annual operating expense is $6,880,000 the income from sales is $7,350,000, the total annual income is $8,175,000, and the ratio of operating expense to total income or the operating ratio "R" is then 0.842. If I = the return on the investment and N = the number of years to turn over the invested capitol,—

$$I \cdot N = 1 - R$$
$$2.71\ I = 1 - 0.842 = 0.158$$
$$I = 0.0582 \text{ or } 5.82 \text{ percent}$$

Since the operating expenses used in this calculation included interest, depreciation, obsolescence, and maintenance reserves, a return of 5.82 percent on the total capital value may be considered entirely sound, altho not particularly attractive from an investment aspect.

Since in the example given, the investment in woodlands is such a large proportion of the total capital value, (56 percent) an old established paper manufacturer having made his investment in forest lands under the values prevailing ten or fifteen years ago, has been in an excellent position to modernize his plants and even increase their capacity within the range of balanced operations in spite of the high costs of construction, which have served to delay such work on the part of those not so well situated. The record shows that this has actually been done.

The mill's cost records and balance sheet must of course be carefully examined before management is in a position to decide the extent of a proposed modernization program, but it appears to me that the decisive features will probably be access to an adequate timber supply on satisfactory terms, a reasonably favorable mill location, and sound financing. Given these features, I believe that first rate maintenance and a regularly budgeted allowance for improvements and modernization are essential to a continued profitable operation.

A succeeding article will throw further light on this subject in the hope of clarifying the future course of progressive management policy.

Pulp Bleaching Processes

By LAWRENCE E. RUSSELL
Mathieson Chemical Corp., 60 E. 42nd St., New York 17, N. Y.

Lawrence E. Russell, guest speaker on the March 8, 1949, program of the Black-Clawson, Shartle, Dilts lecture course in papermaking.

Similar to all processes in the manufacture of pulp and paper, the proper answer to the question, "How is pulp bleached?" is—"It varies." I doubt if there are two pulp bleaching plants in the world using identical unit operations to bleach their pulp. However, there are certain basic considerations that permit one to arrive at the proper choice of equipment, chemicals and process conditions to obtain a desired end result. These broader concepts will be considered here.

Definitions

To avoid misunderstanding, there are a few expressions which should be clarified. Since most bleaching is done with chlorine compounds, the usual term for describing the amount of oxidizing agent present is "available chlorine." This term often causes a considerable amount of confusion. By definition, 100% available chlorine is represented by molecular chlorine with a molecular weight of 71, which gains two elec-

trons or liberates one molecule of iodine when reacted with potassium iodide.

$$Cl_2 \xrightarrow{+2e} 2Cl^-$$

$$2I^- \xrightarrow{-2e} I_2$$

The confusion is immediately realized if one writes the simple reaction of chlorine in water.

$$Cl_2 + H_2O \rightleftharpoons HOCl + HCl$$

Certainly from this reaction one could easily conclude that only ½ of the chlorine is "available" for oxidation purposes, namely, the chlorine in hypochlorous acid. However, by definition we neglect the fact that ½ of the chlorine is present as the chloride ion and say that this represents 100% available chlorine.

In the case of chlorine dioxide (ClO_2) we find an oxidizing agent that gains 5e in the reduction or 2½ times molecular chlorine. The molecular weight, however, is not 71 but 67.5; therefore, the available chlorine content of chlorine dioxide is as follows:

$$\frac{5/2 \times 100}{67.5} = 265\% \text{ available chlorine as chlorine dioxide}$$

$$71$$

At times we even calculate bleaching agents such as sodium or hydrogen peroxide in terms of available chlorine.

"Residual chlorine" is defined as the amount of available chlorine remaining in the stock at the end of the bleach, just prior to washing.

The usual strength tests such as mullen, tear, fold, etc., are used as criteria for the efficiency of the bleaching process together with the measurement of "brightness" which is defined as the reflectance of light of a specified wave length from a sheet of the pulp, as measured by a photoelectric cell, compared to the reflectance of light of the same wave length from a block of magnesium oxide.

Bleaching Agents

A list of the chemicals commonly used in pulp bleaching processes, includes—chlorine, hypochlorous acid, sodium and calcium hypochlorite, sodium chlorite, and chlorine dioxide—in the chlorine family. Hydrogen peroxide and sodium peroxide are the two peroxygen members with some development work being done on sodium peracetate made from the mixture of peroxide and acetic anhydride. Zinc hydrosulphite and sulphur dioxide represent the two reducing agents. Sodium hydroxide may also be considered a bleaching agent due to its use in the purification stages of pulp bleaching processes.

Chlorine is purchased in tank cars or cylinders as a liquefied gas under pressure. Hypochlorous acid and the hypochlorites are usually made at the mill. Chlorous acid and chlorine dioxide are made at the mill from sodium chlorite which is a flaked product shipped in drums. Hydrogen peroxide is shipped as a 35 or 50% water solution in tank cars. Sodium peroxide and zinc hydrosulphite are solids shipped in drums. Sulphur dioxide may be available from sulphur burner operation or purchased as a liquefied gas. Sodium hydroxide is either a 50 or 73% water solution in tank cars, flaked or solid in drums.

Bleaching Processes

The first and possibly one of the most important points that I wish to make here, is that nearly all pulp bleaching processes are designed not only to oxidize or reduce colored materials to effect a higher brightness, but also to continue the purification of the cellulose in order to influence the amount of oxidation required and thus directly affect the strength retention during the process. This point is substantially the foundation of multi-stage bleaching.

Although the time is limited for a subject as broad as this one, we shall attempt to briefly consider the various processes, what they are designed to accomplish, and from this discussion bring out the obvious conclusions.

The simplest bleaching process consists of a single stage using either sodium or calcium hypochlorite on a chemical pulp—sulphite, soda, or sulphate. Consistency can vary from 4-16% but generally is not greater than pumping limits. Dut to the fact that appreciably increased degradation or strength loss occurs at higher temperatures with hypochlorite, the temperature should be limited to a maximum of 40°C. Degradation also increases with a decrease in pH, but rate of bleaching increases as pH decreases. Therefore, a compromise is made between capacity and strength loss with the pH usually falling in the range of 8.0-9.5.

As the law of diminishing returns is just as evident in pulp bleaching as it is in any business, there is a very definite brightness limit for each pulp which may be readily determined with bleachability tests. Using a greater quantity of bleaching agent in the single stage will not accomplish anything but greater strength loss and possibly even a decrease in brightness. A single stage bleach gives the following general results: (1) A minimum of purification; (2) A maximum chemical cost per unit brightness obtained; (3) A minimum investment per unit of brightness in the case of sulphite and soda. (This is true in sulphate only if a very low brightness is desired.); (4) A maximum strength loss per unit of brightness.

Two stage bleaching processes usually consist of either two hypochlorite stages or chlorination followed by a hypochlorite stage. Sulphite and soda pulps are the major types bleached in two stages. Two stages of hypochlorite produce small savings in time and chemicals as well as additional strength retention compared to a single stage process. Investment cost is increased and this method will not usually result in sufficient economic advantages to recommend its use. The two-stage process consisting of chlorination followed by hypochlorite, satisfies the technical reasoning concerning the sequence of stages in bleaching processes—if there are to be only two.

When chlorine is added to pulp containing lignin, in a water suspension, there are three reactions that occur: direct addition, substitution, and oxidation. All are purifying reactions in which lignin is solubilized and removed for the lowest chemical and investment costs. The second stage of oxidation can then be applied to secure the brightness ceiling of the pulp under consideration. Compared with a single stage of hypo-

chlorite, there will be the following general results: (1) A lower chemical cost per unit of brightness; (2) A higher brightness ceiling; (3) A larger investment; (4) Higher strength at equivalent brightness.

A three stage pulp bleaching process introduces for the first time a caustic extraction stage using sodium hydroxide. Depending on the type of pulp, this stage will use from 1-3% sodium hydroxide on the weight of the pulp and temperatures ranging from 50-70°C. The sequence of stages is—chlorine for purification; caustic extraction, for further purification; oxidation, to obtain the brightness ceiling of the pulp.

It was mentioned above that chlorine solubilizes lignin. However, there are products in the fiber and water that are alkali soluble and acid insoluble. These are removed in the second or alkaline extraction stage. The efficiency of this stage depends on diffusion into the fiber or alkali and diffusion out of colored, soluble materials. Concentration is kept high and steam cost low by using high consistency whenever possible. A one-hour retention time is usually sufficient.

Four, five, six or more stages are normally used for bleaching sulphate pulp due to the extreme difficulty of producing a high white pulp with low strength loss in 1, 2, or 3 stages as can be done in the case of sulphite or soda. In the consideration of these multi-stage kraft bleaching systems, there is a great field for individual differences of opinion and variations due, not only for technical reasons, but also due to factors such as paper requirements, wood supply, capital available, water, etc.

In the writer's opinion, five stages consisting of (1) chlorination, (2) caustic extraction, (3) oxidation, (4) caustic extraction, (5) oxidation, are the proper technical sequences and maximum number of stages required for the production of a high strength, 80 brightness pulp from sulphate pulp. To increase the brightness into the 85+ range, it is necessary to either increase the capital investment and use a double chlorination-extraction set-up, or increase the number of oxidation stages, or use an oxidizing agent other than hypochlorite.

It should be mentioned here in connection with these multi-stage processes that the caustic extraction following the first oxidation stage also acts in the capacity of removing solubilized and oxidized materials that restrict the brightness ceiling if left in the pulp.

Pulp consistency in the chlorination stages should not exceed 4% for optimum efficiency. To obtain a high chemical concentration and reduce the steam cost, the consistency in the caustic extraction stage should preferably be 12% or above. In the oxidation stages, the decision is controversial regarding low or high consistence. In a multi-stage system the preferred arrangement, in the writer's opinion, is high consistence intermediate stages with a low consistence final stage. This is particularly true in a continuous bleach plant where control is difficult and the final low density stage evens out some of the variations in previous stages.

From the work done up to the present time, it is the writer's opinion that the sulphate mills requiring high strength-high brightness pulp will generally be using chlorine dioxide as the oxidizing agent within the next 2-3 years. Although the Company I represent has been producing and studying this chemical since 1927 and is therefore, technically equipped for training personnel of sulphate mills in the most efficient methods for its use, I have endeavored to appraise the situation on an impersonal evaluation of the technical facts.

Before consideration is given to special bleaching processes, some general conclusions on sulphite, soda, and sulphate bleaching can be formulated: (1) Chemical cost is reduced using multiple stage bleaching; (2) Brightness ceiling is increased using multiple stage bleaching; (3) Investment per ton is increased using multiple stage bleaching; (4) Cost per ton per unit brightness is decreased using the proper sequence and minimum number of stages to produce the brightness required at a given strength. (5) Purification is the chief function of both chlorine and sodium hydroxide in a bleaching system. (6) Temperature and pH should be controlled in hypochlorite stages for protection of pulp strength.

During the last ten years there has developed a substantial tonnage of bleached groundwood using peroxide. Peroxide does not solubilize lignin and therefore is ideal for groundwood pulp containing practically all of the lignin originally present in the wood. The result is an increase in brightness without any loss in yield or change in printing qualities (unless it is a slight change for the better.)

Either sodium or hydrogen peroxide may be used as the source of active oxygen. This is stabilized and buffered, by the use of sodium silicate. When sodium peroxide is used, some of the alkali is neutralized with sulphuric acid. With hydrogen peroxide this would, of course, not be necessary. Chemical requirements range from 1-2% sodium peroxide on the weight of the pulp and 4-5% of 41.5°B sodium silicate. Process time can be controlled by control of temperature. After the oxidation reaction is finished, the residual available oxygen is reduced with sulphur dioxide or similar chemicals such as sulphite cooking acid.

For optimum efficiency higher densities are recommended and the process can be operated either batch or continuous.

Seven to ten points of brightness are obtained with the consumption of 1.25-1.75% of sodium peroxide on the weight of the pulp. Hydrogen peroxide can be used interchangeably, but the chemical cost is higher.

Brief mention was made previously of bleaching with sodium chlorite or chlorine dioxide. For a number of years specialty mills bleaching rag stock, flax pulp, or very high grade kraft have used sodium chlorite on the acid side, pH 3.5-4.5, at temperatures of 60-77°C to produce a pulp of extremely high brightness with no strength loss. Sodium chlorite has also been used with hypochlorite to increase the brightness, reduce the strength loss, and provide a chemical control mechanism to offset the practical difficulties of close temperature and pH control to minimize strength loss.

However, there has been considerable work done in this country recently using a solution of chlorine dioxide for the oxidation stages containing a small amount of chlorine. The chlorine dioxide may be generated at the mill from either a chlorate or from sodium chlorite. The generation method will vary from mill to mill depending on the size of the plant, point of application, raw materials available, etc.

The result of this chlorine dioxide process is a sulphate pulp of 85+ brightness for an over-all cost only slightly greater than present practice for producing 80 brightness and no appreciable strength loss in the final stage where chlorine dioxide is used.

With the bleaching steps determined, the next question is whether continuous or batch equipment should be used. Generally, a continuous system has the following advantages: (1) Has lower initial cost for production rates of 50-100 tons/day or more. (2) Requires less space and (3) Uses less power. A continuous system also has the following disadvantages: (1) Is less versatile on pulp changes; (2) More difficult to control and (3) Higher investment costs for production rates below economic minimum of 50-100 tons per day.

Continuous Bleaching Equipment

The primary object of bleaching equipment is to obtain proper mixing of pulp and chemicals throughout the entire bleaching cycle. Therefore reaction cells should be designed to provide adequate agitation for the necessary length of time at the required consistency.

Chlorinators operate at low density with pulp flow upward. Chlorine and pulp are either premixed or thoroughly mixed as stock enters. The top discharges directly to a vacuum filter.

Caustic extractors and hypochlorite bleachers are vertical cells, usually down-flow for high density stock and up-flow for lower pumping consistencies.

Batch Bleaching Equipment

In batch bleaching the reaction cells must be designed with sufficient capacity to provide time for filling, reaction, and discharge to a washer. Chlorinators are usually limited in capacity to five or six tons and are vertical cylinders with a chlorine inlet in the bottom at the impellor. An inner shell assists in the agitation of the stock.

A Fletcher type cell is especially suitable for high consistency caustic extraction. This Fletcher cell is merely a cylindrical tank with a draft tube in the center through which a helicoid screw rotates. The bottom end of the screw carries a scraper foot which drags pulp to the center of the bleacher. Modifications of this equipment are many, principally depending on draft tube design, location of drive, etc.

Oxidation stages utilize equipment ranging from a beater with washing attachment, to the Bellmer or Fletcher unit as mentioned above.

Materials of Construction

Corrosive conditions are present in every part of a bleach plant. The chlorination stage must resist both hydrochloric and hypochlorous acid. Tanks are made of steel with rubber or tile linings, or of concrete with tile linings. Wood is used in many places with a calculated rate of replacement. High molybdenum stainless steels are quite good as are the special chlorine resistant plastic coatings.

Pumps are made of stainless steel or rubber lined iron. Agitators are rubber covered iron, with stainless propellers.

The caustic extraction equipment may be of steel or cast iron and the hypochlorite bleachers, tile-lined concrete. Auxiliary equipment should, however, be of rubber, stainless steel or wood.

It is possible to conclude the following generalizations concerning pulp bleaching processes: (1) Bleaching consists of purification as well as decolorization; (2) The economic procedure for a given capital investment requires a study of each pulp as to its brightness ceiling; (3) Adequate washing capacity is probably more important in a bleaching system than any other single unit process; (4) The final pulp quality desired, determines the number and sequence of stages; (5) High brightness pulp requires adequate amounts of good water; (6) In the future new chemicals will produce bleached pulps of higher strength and higher brightness without an appreciable increase in over-all cost.

Industrial Development Section, Page 108

New Water Route Service

Ottawa—Following in the wake of the Canadian railways' action in increasing freight rates on a large number of commodities in the so-called "competitive" category of shipments which requires no permission of the Board of Transport Commissioners in Ottawa, an announcement has been made that general steamship agents will start an all-water steamship service between Montreal in the East and Vancouver on the West Coast on about April 25, with a "steamship pool-car" service being tied in with the new all-water service covering such commodities as paper and no intermediate stops being planned.

In addition, it is expected that the coming competition between the Canadian railways and the steamship service, which will go through the Panama Canal, will be intensified greatly if more vessels are added to the all-water service and this is anticipated. Then again, if more favorable rates should be offered by the all-water service, a real price war might be in the making. From all these developments, shippers may benefit, it is openly predicted in the trade.

U. K., Netherlands ECA

Washington—The United Kingdom was to receive pulp, paper and paper products from Canada totaling $7,990,000 for the first quarter, 1949, under an ECA authorization announced in mid-March. An additional authorization gives the Netherlands, for the same quarter, pulp and paper products, not including newsprint, totaling $18,000, from the United States.

ASA Paper Standards

New York — With the adoption of three standard sizes — one for pamphlets, one for books, and one for pocket-size books — the American Standards Ass'n. has acted to bring about greater uniformity in the size of American Standards. At present, American Standards are published in some 20 different sizes by the many national organizations that are active in the standardization program. The three sizes now adopted by ASA are: 8½ x 11 in. for pamphlets; 6 x 9 in. for books; and 5¼ x 7¾ in. for pocket-size books.

Gas Tax Legislation

Ottawa—Legislation to remove the three-cent tax on gasoline used in lumbering operations is forecast officially for the Nova Scotia Government.

Trends

Office of the PAPER TRADE JOURNAL,
Wednesday, March 23, 1949.

Business Yardstick

(1) *Unemployment.* A drop of 39,000 in continued jobless pay claims was reported for the week ended March 12. A gain of 2000 in new claims is held to be a matter of shifting figures in Rhode Island and Maryland records. Officials of the Bureau of Employment Security state that actually total initial claims dropped by 12,200 countrywise. Total employment is given at 57,400,000, slightly higher than a year ago "when unemployment was near the minimum to be expected in a peacetime economy," states the U.S. Monthly Labor Review, February issue.

Unemployment is somewhat above that which is normal during periods of prosperity, in the opinion of La Salle Extension University's *Business Bulletin.* "Part of the change is seasonal and a substantial portion of it concerns people who are out of work while changing from one position to another or while shifts are being made among different industries."

(2) *Dept. Store Sales.* For the week ended March 12, Federal Reserve Board reports an 8 percent national decline, with specialty stores 17 percent down. An upturn during the week ended March 16 brought dollar volume up close to 1948's week of pre-Easter buying, D&B disclosed. Consumer interest in electrical appliances is reported as lagging. Furniture, floor coverings, housewares are said to be moving moderately.

Freight Carloadings. Total loadings for the week ended March 12 were given as 709,326 by the Ass'n. of American Railroads, 3,774 more than the previous week, though 87,160 behind 1948's week. Freight carloadings for the week showed a drop of 10.9 percent from 1948's week, and 15.7 from 1947's. Forest products gained 930 over the earlier week though registering a loss of 6,485 from 1948's.

Wood Pulp

A plan to introduce a special new dollar rate for Swedish exports is believed to be under discussion in Paris during OEEC negotiations, says the AP&PA News Summary, quoting from the International Monetary Fund's publication of March 10. The special dollar exchange rate, which would be below the official dollar rate, would enable Sweden industries to compete in U.S. markets.

It is fairly well established to the moment of going to press that the Canadian producers earnestly desire to hold second quarter prices to announced levels. It likewise is generally felt in New York trading centers that there may be sufficient pressure to make difficult their foothold. Pawns in the way of a reduction in bleached soda from $130 to $125 and unbleached kraft to $105, full freight allowed, have been given. But whether the sulphites at $135 for bleached and $125 for unbleached can hold against Swedish and Finnish at $132.50 and $122.50 with $7.50 maximum freight allowance, and Norwegian bleached sulphite at $125 flat, no freight allowed, is moot. The mills, by reason of moderate production demands and adequate stocks, are able to call the play. Buying to immediate requirements only is being done, and no upturn is immediately apparent.

Several leading producers of Norwegian bleached sulphite have just announced their price for the second quarter at $125 per ADT on dock, flat; no freight allowance.

Newsprint

Price of spot newsprint in the U.S. market continues to get attention of both Canadian and U.S. papers. The *Journal's* Montreal correspondent writes that newsprint men believe the great famine is over, indicated by the appearance of Canadian newsprint on the U.S. spot markets at prices of $120 to $130 a ton, about 50 percent below postwar spot market peaks. The spot price, while not affecting the bulk of Canadian production which is sold on a contract basis of $100 a ton delivered New York, does indicate that the demand not covered by contract sales has been greatly reduced. "A number of U.S. newsprint dealers are said to be *fishing* for customers, and one has described the newsprint market as *dried up.*"

The ANPA's latest bulletin reports quotations on spot newsprint from overseas and from Canada in considerable quantities, delivered New York City as low as $112.50 in some cases and $118 in others. Other New York dailies give $100 as spot prices, supporting the belief of ANPA that "within a short time spot newsprint prices will be no higher than contract prices with large quantities available."

U.S. apparent total consumption for February showed a decrease of 4,002 tons, the Newsprint Association of Canada reports. Since publishers reporting to ANPA showed a gain in consumption for the month, the drop came from country weeklies, commercial printers, shopping news, comic magazines, government, etc.

Newspaper advertising linage in 52 U.S. cities for January 1949 is given as 5.5 percent higher than January 1948. Magazine advertising linage for 1949's first two months was 6.2 percent less than in like period of 1948.

European imports for January and February total 55,131 tons, an increase of 77.4 percent over 1948's 31,082 tons.

Kraft

The bearish rumors concerning the paper industry as a whole are not reflected in statistics of the kraft paper manufacturers, according to statement issued last week by Dernell Every, secretary of the Kraft Paper Assn. In his report at the regular monthly meeting of the Executive Committee of that association, Mr. Every pointed out that new orders for unbleached kraft paper during the first nine weeks of 1949 amounted to approximately 354,000 tons, only 1,000 tons lower than orders received in the same period of last year; and for the most recent week, the industry established a new high record for orders thus far this year.

Waste Paper

The one bright spot in this weak market is the demand for pulp substitute varieties. Announcement of second quarter pulp prices at new lows has not weakened mill demand, as some had expected. To the contrary, consuming mills exhibit an inclination to eke out their stocks of pulp with waste paper substitutes. The market for these grades is firm.

Others are reported to be already in oversupply with an increase in collections due with the return of Spring weather. "With an substantial oversupply existing now, and the mills stocked with a greater number of days' supply than during any March since 1943, it is quite evident that it will be impossible to salvage a very substantial tonnage of the waste paper that appears during the coming months," writes Director Colley S. Baker of the E.C.C. Consumption of waste paper has fallen off between 10 and 12 percent from the corresponding period of last year and the previous year as well.

The New York area continues to be hardest hit, with the weakness spreading through Pennsylvania. Boston showed some strengthening during the last week. Chicago and the Midwest are reported on the upgrade, not only in paper and paperboards industry but in general business volume

Indexes

Index of general business activity for the week ended March 12 inclined to 147.0 from 146.7 in the preceding week, compared with 151.4 in the corresponding week of 1948. Index of paperboard production rose to 162.1 from 157.8 in the preceding week, compared with 187.3 is the corresponding week of 1948.

Comparative ratios of U.S. paper and paperboard production to mill capacity, as reported by AP&PA are:

	Mar. 12 1949	Mar. 5 1949	Mar. 13 1948	Mar. 14 1947	Mar. 15 1946
Paper**	91.0	‡90.6	100.9	107.2	104.1
Paperboard ..	80.0	79.0	102.0	104.0	100.0

** Capacity in tons: 180,583; 1948, 174,668.
‡ Revised.

Paperboard Production (Tons)

	Mar. 12 1949	Mar. 5 1949	Mar. 13 1948
Production	162,692	157,814	188,587
New Orders	158,333	178,515	188,104
Unfilled Orders	278,632	287,302	481,757

Percent of Activity, Current 80%; Year, 85%.

Imports

Week Ending March 19

NEW YORK

Newsprint

N. Y. Times, Tudor Prince, Cornerbrook, 1633 rolls.
Bowater Paper Co., Tudor Prince, Cornerbrook, 403 rolls.
Gilman Paper Co., Tudor Prince, Cornerbrook, 98 rolls.
Wall Street Journal, Tudor Prince, Cornerbrook, 181 rolls.
Hearst Enterprises, Inc., Tudor Prince, Cornerbrook, 388 rolls.

Serviettes

A. C. O. Leather Co., American Chief, Hamburg, 78 bls.
H. W. Robinson Co., American Importer, London, 1 cs.

Writing Paper

American Express Co., American Chief, Havre, 16 cs.
H. W. Robinson Co., American Importer, London, 5 cs.

Wallpaper

Meadows Wye & Co., Queen Mary, Southampton, 1 cs.
American Express Co., Indochinois, Havre, 1 bdle.
C. A. Haynes Co., Parthia, Liverpool, 26 cs.

Drawing Paper

Lansen Naeve Corp., Indochinois, Havre, 6 cs.

Tissue Paper

Pongees Corp., Courser, Kobe, 22 cs. (insulating).

Rice Paper

G. Posner, Courser, Shanghai, 20 cs.

Gummed Paper

B. F. Drakenfeld & Co., Parthia, Liverpool, 22 cs.

Tracing Cloth

E. Dietzgen & Co., Parthia, Liverpool, 7 bls. (bleached cotton).

Fibre Boards

Oliner Fiber Co., Gripsholm, Gothenburg, 191 bls.

Rags, Baggings, Etc.

Royal Manufacturing Co., Raphael Semmes, Antwerp, 76 bls. cotton waste.
(———), Exton, Venice, 54 bls. old bagging.
Royal Manufacturing Co., Hastings, Antwerp, 50 bls. cotton waste.
National Bank of Detroit, Robert Maersk, Rouen, 48 bls. jute rags.
A. de Vries Trading Corp., Robert Maersk, Rouen, 48 bls. rags.
Royal Manufacturing Co., Robert Maersk, Rouen, 46 bls. cotton waste.
Midwest Waste Materials Co., Robert Maersk, Antwerp, 204 bls. scrap bagging.
A. W. Fenton Co., Havmann, Antwerp, 87 bls. scrap bagging.
J. J. Rozendaal, Kim, Dunkirk, 29 bls. mixed bagging.
Midwest Waste Materials Co., Kim, Havre, 30 bls. scrap bagging.
Ayres W. C. Jones & Co., Kim, Rouen, 125 bls. cotton waste.
Irving Trust Co., Francis, Antwerp, 56 bls. bagging.
National City Bank, Kristina Thorden, Gothenburg, 81 bls. bagging.
New England Waste Co., Steel Age, Bombay, 50 bls. cotton waste.
Atlas Manufacturing Co., Agwiking, Havana, 11 bls. cotton waste.
National City Bank, Excambion, Genoa, 323 bls. old bagging.
Chase National Bank, Excambion, Genoa, 63 bls. old bagging.

Gluestock

Karr Ellis & Co., Parthia, Liverpool, 325 bags hidecuttings.

Casein

Tupman Thurlow & Co., Viatina, Buenos Aires, 500 bags (lactic).
The Borden Co. Chemical Division, Argentina, Buenos Aires, 1000 bags.
American Cyanamid Co., Argentina, Buenos Aires, 1700 bags.
Balfour Guthrie & Co., Argentina, Buenos Aires, 500 bags.

Woodpulp

Perkins Goodwin & Co., Gripsholm, Gothenburg, 1 bl. sulphite pulp.

Woodpulp Boards

Fiber Products Manufacturing Co., Gripsholm, Gothenburg, 58 bls.

NEWARK

Cellulose Sales Co., Vasaholm, Springsviken, 636 bls. sulphate pulp.
Pulp & Paper Trading Co., Vasaholm, Springsviken, 2743 bls. strong sulphite pulp.
Pagel Horton & Co., Inc., Vasaholm, Springsviken, 2439 bls. dry bleached sulphate pulp.
Gottesman & Co., Inc., Vasaholm, Springsviken, 609 bls., ½ prime strong sulphite pulp, 1824 bls. strong sulphite pulp.

BOSTON

B. Seigel, Mormactide, Santos, 13 bls. rags.

PHILADELPHIA

E. J. Keller Co., Inc., Kim, Rouen, 163 bls. paperstock.
Gottesman & Co., Inc., Vasaholm, Svano-Husum, 1719 bls. ½ prime strong sulphite pulp, 4266 bls. strong sulphite pulp.
Pagel Horton & Co., Inc., Vasaholm, Svano-Husum, 3657 bls. dry bleached sulphate pulp.
Tradesmans National Bank, Jalakanta, Port Said, 60 bls. old white cotton rags.

BALTIMORE

Perkins Goodwin & Co., Vasaholm, Svano, 6094 bls. strong sulphite pulp.
Pulp & Paper Trading Co., Vasaholm, Svano, 609 bls. strong sulphite pulp.

TAPPI Niagara Falls Meet

NIAGARA FALLS, N. Y. — More than 100 members and guests of TAPPI attended the joint meeting of the Western New York Group, Empire State Section with the Canadian Technical Group at the Prospect House on March 9. George H. Rand of the International Paper Co. presided and introduced A. B. Gorham, chairman of the Canadian Section, who gave a brief outline of the activities of that group. E. S. Skinner, design engineer for Beloit Iron Works, entertained the gathering with lantern slides illustrating late improvements in fourdrinier machine design. Plans for the next meeting will be released at an early date.

READING, Pa. — Elizabeth M. Fahrbach on March 10 filed equity proceedings in the Berks County court against Irene Long Kissinger, asking for the appointment of a receiver to close the affairs of the Reading Paper Box Co., this city, and dissolve the partnership. The bill says "there is no question of insolvency of the partnership at this time."

Maine-N. H. Tappi •

BRUNSWICK, Maine—The Executive Committee of the Maine-New Hampshire Section of TAPPI has decided to hold its Spring meeting at the Wentworth-by-the-Sea, Portsmouth, N. H., June 17-18.

This is the first time a regular meeting of the Section has been selected in New Hampshire.

The Saturday noon luncheon will be held on the shore and will be an old fashioned clam bake (weather permitting).

The committee consisting of Dr. J. J. Thomas of the S. D. Warren Co., and George Day of the Brown Co., as chairmen will arrange the technical program for Friday afternoon and Saturday morning.

A program is also being arranged for the ladies attending the meeting.

The committee on arrangements includes Dr. Thomas; F. B. Lincoln, Jr., of the Hollingsworth & Whitney Co.; W. D. Stroud, of F. C. Huyck & Sons; with J. F. Wright, of the National Analine Div., Allied Chemical & Dye Corp., as chairman.

ECA Authorizations

WASHINGTON — Pulp, paper and paper products from Canada and Newfoundland were included in ECA authorizations for the week beginning March 14. Included: for second quarter, 1949, from Canada and Newfoundland, $1,000; for same quarter, from United States, $1,000, both authorizations for United Kingdom. Crude tall oil, rosin, and related products featured ECA authorizations the week ended March 12. Among them were: for Austria, first quarter, 1949, crude tall oil, from U.S. sources, $19,000; Bizonal Germany, same quarter, wood rosin, from U.S. sources, $100,000.

January Merchant Sales

WASHINGTON — A sales decline of five percent was reported for January, 1949, compared with December, by a reporting group of 52 paper and paper products wholesalers, according to the Bureau of Census. The group's January sales were ten percent below those of the same month in 1948. Sales for the month totaled $6,657,000. Inventories of 24 reporting firms rose one percent from December, in January.

Swedish Labor Reps. Visit

WASHINGTON—J. V. Kumblad, secretary of the Swedish Paper Workers' Union, and Birger Ohqvist, of the same organization, were among 12 Swedish labor representatives who arrived in New York recently for a two-week industrial tour of the U.S. under ECA auspices.

Prices

Quotations indicate trends in an open market. At the moment they can be of little more value. While some volume business still is done under contract at the figures shown, fluctuations are too varied and frequent to permit prices to be interpreted as representing a wholly stabilized market.

NEW YORK

Paper

Delivered New York

STANDARD NEWS, per ton—

Rolls, contract	$100.00/	—
Sheets	115.00/	—

F.o.b. mill, varying freight allowances, Zone 1.

KRAFT—per cwt., 40# base wgt.

No. 1 Wrapping	7.75/	8.00
Standard Wrapping Rolls	7.00/	—
Standard Wrapping Sheets	7.50/	—
Standard Bag	6.50/	—
Multiwall Bag, 40# and heavier, 24x36 (500 sheets)		
Southern	7.50/	7.75
Northern	8.85/	10.15

TISSUES—Per Ream 24x36 (480) 10/11 lbs.

Wh. No. 1 Frd.	$1.84/	$2.00
Wh. No. 1 M. G.	1.94/	2.00
Wh. No. 1½	1.65/	—
Wh. No. 2	1.45/	1.55
Kraft Anti-Tar	1.65/	—
Kraft Unbl	1.85/	—
Shred. Wh. No. 1 per lb.	.12½/	.18

TOILET—Per Case of 100 rolls—1 M Sheets.

Unbleached 4½x4½	$7.20/	—
Unbleached 4½x5	5.85/	—
Bleached 4½x4½	8.00/	—
Bleached 4½x5	8.45/	8.80
Per Case of 50 rolls—1500 sheets		
Unbleached 4½x4½	$5.70/	—
Per Case of 50 rolls—2000 sheets		
Unbleached 4½x4½	$6.95/	—
Bleached 4½x4½	7.70/	—

PAPER TOWELS—Per Case of 3750—Zone 1.

Wh. Jr. M'tif'd 9¼x9½	$5.45	
Br. Sr. M'tif'd 10x12	3.80	
Br. Jr. M'tif'd 9½x9¾	3.30	
Br. Jr. Sgl. fold 10x10¾	3.35	

MANILA, per cwt.

No. 1 Jute Tag, sheets*	$15.05/	—
Reg. Jute M.F. Manila, sheets*	13.50/	15.30
No. 1 Manila Wrapping	8.75/	10.50
Printing Manila	10.00/	11.00
* Less usual allowance for rolls.		

BOARDS, per ton—

Filled News	$80.00/	$82.50
Plain Chip	80.00/	—
Bldd. Mla. L-d. Chip*	102.50/	105.00
White Pat. coated*	120.00/	
Kraft Liners 42 lb.	105.00/	
Kraft Corr. .009	110.00/	

Binders Boards 120.00/126.00

* Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following prices are representative of distributors' resale prices, all deliveries in Zone 1:

RAG CONTENT BONDS AND LEDGERS—

White, 20 lb.

BONDS, per cwt.

	Carton	4 Cart.	Ton
100% Rag Ex. No. 1	$55.50	$51.40	$49.30
100% Rag	48.25	44.55	42.70
75% Rag	37.50	34.55	33.10
50% Rag	31.50	28.75	27.60
25% Rag	28.00	25.50	24.50

LEDGERS, per cwt.

100% Rag Ex. No. 1	$57.00	$52.65	$50.50
100% Rag	49.50	45.80	43.90
75% Rag	38.75	35.80	34.30
50% Rag	33.00	30.05	28.85
25% Rag	29.50	26.80	25.70

SULPHITE BONDS AND LEDGERS—

White, 20 lb.

BONDS, per cwt.

No. 1	$21.25	$19.25	$18.50
No. 2	20.25	18.30	17.55
No. 4	19.25	17.55	16.85

LEDGERS, per cwt.—

No. 1	$21.75	$19.65	$18.85
No. 2	20.75	18.75	18.05
No. 4	20.00	18.10	17.35

WHITE BOOK, per cwt.—

	Conv. Coated	Case	
No. 1		$20.10	$20.90
No. 2		19.15	19.65
No. 3		18.40	18.90
	Machine Coated		
No. 1		16.65	17.15
No. 2		14.90	16.50
	Uncoated		
No. 1 Antique (Watermarked)		15.90	16.40
Offset		15.15	17.15
A Grade E. F.		14.40	15.40
A Grade S. C.		15.90	—
B Grade E. F.		14.40	15.15
B Grade S. C.		14.80	15.65

World Wood Pulp Markets at a Glance

Second Quarter Contract Prices, Per Short Air-Dry Ton

	Delivered, with varying freight allowances		On dock Atlantic Ports with frt. allow. up to $7.50 gross		
	U. S	Canadian	Swedish	Finnish	Norwegian
Groundwood	$80.00/ —	$75.00/ 80.00			
Sideruns Pulping News		80.00/ 90.00			
Soda, Bleached	125.00/ —	125.00/ —			
Sulphate, Bleached	‡132.50/136.00	140.00/150.00	136.00/140.00		
Sulphate, Unbl'd North'n	105.00/ —	105.00/112.50	112.50/ —	112.50/ —	
Sulphate, Unbl'd South'n	95.00/ —				
Sulphite, Blchd. (S'ftw'd)	126.50/135.00	135.00/ —	132.50/ —	132.50/ —	*125.00/140.00
Sulphite, Blchd. (H'dw'd)	125.00/145.00				
Sulphite, Unbleached	118.00/ —	125.00/ —	*115.00/122.50	122.50/ —	
Sulphite, Unbl'd (Glassine) (No freight allowed)		118.00/ —			

‡ Southern. * Flat: no freight allowed.

Waste Paper Market

Base Prices to Mills for Average Packings

F.O.B. Shipping Point (Per Ton)

	New York Mar. 22	Philadelphia Mar. 21	Boston Mar. 19	Chicago Feb. 1
No. 1 Hd. Wht. Env. Cuts	$95.00/100.00	$90.00/100.00	$90.00/105.00	$90.00/100.00
No. 1 Hd. Wht. Shvs., unr'l'd	80.00/ 85.00	75.00/ 80.00	80.00/ ——	80.00/ ——
Super Soft Whit. Shvs.	80.00/ 85.00	65.00/ 70.00	80.00/110.00	75.00/ ——
No. 1 Soft Wht. Shvs.	60.00/ 65.00	55.00/ 60.00	70.00/ 80.00	55.00/ ——
No. 1 Fly Leaf Shvs.	40.00/ ——	18.00/ 20.00	35.00/ 40.00	35.00/ ——
No. 1 Gdwd. Fly Leaf Shvs.	20.00/ 30.00	14.00/ 16.00	25.00/ ——	45.00/ ——
No. 1 Heavy Books & Mag.	17.00/ 19.00	14.00/ 16.00	22.00/ 23.00	23.50/ ——
Mixed Books	9.00/ 11.00	7.00/ 8.00	12.00/ ——	9.00/ ——
No. 1 Wht. Ledger	35.00/ 40.00	35.00/ 40.00	45.00/ 50.00	
Colored Ledger	30.00/ 32.50	25.00/ 30.00	37.50/ ——	30.00/ 31.00
Manila Tab. Cards	50.00/ 55.00	55.00/ 60.00	65.00/ 75.00	65.00/ ——
New Manila Env. Cuts	60.00/ 70.00	60.00/ 65.00	60.00/ 70.00	70.00/ ——
Extra Manilas	20.00/ 25.00	20.00/ 25.00	30.00/ 35.00	30.00/ 35.00
Mxd. Kraft, Bag Cuts	45.00/ 55.00	45.00/ 50.00	70.00/ ——	60.00/ ——
Kraft Envelope Cuts	60.00/ 65.00	60.00/ 65.00	70.00/ 75.00	65.00/ ——
Trpl. Std. No. 1 Brn. Sft. Kraft	30.00/ 35.00	30.00/ 35.00	40.00/ 45.00	40.00/ ——
New Kraft Corr. Cuts	25.00/ 30.00	25.00/ 30.00	45.00/ ——	55.00/ ——
No. 1 Asstd. Old Kraft	25.00/ 30.00	25.00/ 30.00	25.00/ ——	20.00/ ——
Used Kraft Bags	25.00/ 30.00	14.00/ 18.00	30.00/ ——	35.00/ ——
New Jute Corr. Cuts	18.00/ ——	18.00/ 20.00	16.00/ ——	17.00/ 18.00
Old Corrugated	12.00/ 13.00	11.00/ 13.00	12.50/ 13.50	14.00/ ——
No. 1 News	10.00/ 12.00	7.00/ 10.00	11.00/ 12.00	—— / 15.00
No. 1 Mixed Paper	4.00/ 5.00	4.00/ 5.00	—— / 7.00	7.00/ ——
Box Board Cuts	6.00/ 7.00	4.00/ 5.00	10.00/ ——	10.00/ ——
White Blank News	55.00/ 60.00	60.00/ 65.00	—— / 60.00	45.00/ ——
Overissue News	12.00/ 14.00	10.00/ 12.00	11.00/ 12.00	18.00/ ——
Sulphite Mill Wrappers	12.00/ 14.00	6.00/ 8.00	15.00/ ——	12.00/ ——

Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)

Coarse Polished—India	.35½/	.36½
Fine Polished India	.41½/	.45
Unpolished—Paper Makers	.32¼/	.34½
Tube Rope	.33¼/	.35½
Wrapping	.36 /	.38¼
Cotton	.58 /	.60
Polished Cotton	.55 /	—
(Hard Fiber)		
Mex. Sisal	.21 /	.27
Manila (Reprocessed)	.31 /	.35
(American Hemp)		
Polished Hemp	.46½/	.48
Unpolished	.35 /	.37¼

Rag Market

New Domestic Cotton Cuttings

(Prices to Dealers, F.o.b. Ship. Pt.)

White Shirt	$10.00/	$10.50
Unbleached Muslin	10.00/	10.50
Light Silesias	7.00/	7.50
White Back Blue Overalls	6.75/	7.25
Blue Overalls	6.25/	6.50
Fancy Shirt	4.50/	5.00
Percales	5.50/	6.00
Light Prints	5.50/	6.00
No. 1 Washables	3.00/	3.25
Bleachable Khaki	5.00/	5.50
Unbleachable Khaki	4.50/	5.00
Cottonades	4.25/	4.75
Lt. Flannelettes	7.00/	7.50
Men's Corduroy	3.50/	4.00
Women's Corduroy	3.00/	3.50

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.	
No. 1 Whites, Repacked	$4.25/	$4.75
No. 1 Whites, Miscellaneous	3.50/	4.00
No. 2 Whites, Repacked	2.75/	3.00

(Continued on page 30)

Prices

CONTINUED FROM PAGE 29

No. 2 Whites, Miscellaneous	2.00/	2.25
Blue Overalls	3.00/	3.25
Thirds and Blues, Repacked	2.00/	2.25
No. 1 Roofing Rags	1.40/	1.50
No. 2 Roofing Rags	1.25/	1.35
No. 3 Jute Bagging	.95/	1.05
No. 4 Brussels & hrd. Bck'd crpts.	.90/	1.00
Roofing Bagging	.80/	.95

New Foreign Cotton Cuttings

(Prices to Dealer, F.o.b. Dock, N. Y.)

Per 100 lbs.

New Dark Cuttings
New Mixed Cuttings
Light Silesias
Light Flannelettes
New White Cuttings
New Unbleached Cuttings
Fancy Shirt Cuttings
Light Prints
Bleachable Khaki, No. 1
Unbl. Khaki, No. 1

prices are nominal

Old Foreign Rags

(Prices to Dealer, F.o.b. Dock, N. Y.)

Per 100 lbs.

No. 1 White Cottons
No. 2 White Cottons
No. 3 White Cottons
No. 4 White Cottons
Extra Light Prints
Old Light Prints
Med. Light Prints
Dutch Blue Cottons
Checks and Blues
Linsey Garments
Dark Cottons, European
Dark Cottons, Egyptian
Old Shopperies
New Shopperies

prices are nominal

Bagging

(Prices to Dealers, f.o.b. N. Y.)

Per 100 lbs.

Foreign Gunny, No. 1	$7.50/	$8.00
Domestic Gunny, No. 1	$7.50/	8.00
Heavy Wool Tares	7.00/	7.50
No. 1 Scrap Bagging	4.75/	5.00
Foreign Manila Rope	5.50/	5.75
Domestic Manila Rope	5.50/	5.75
Jute Strings	6.25/	6.50
No. 1 Sisal Strings	5.00/	5.25
Mixed Strings	1.15/	1.30

PHILADELPHIA

Domestic Rags (new)

(F.o.b. Eastern Shipping Point)

White Shirt	$10.25/	$10.50
Light Silesias	6.75/	7.00
Unbleached Muslin	10.00/	10.25
Light Prints	5.25/	5.50
Washable No. 1	3.00/	3.50
Blue Overall	6.00/	6.25
Percales	5.50/	5.75
Unbleachable Khaki	4.00/	4.25
Bleachable Khaki	5.25/	5.50
Men's Corduroy	4.25/	4.50
Ladies' Corduroy	4.00/	4.25
Cottonades	4.25/	4.50
Fancy Shirts	5.25/	5.50

Domestic Rags (old)

(F.o.b. Eastern Shipping Point)

Mixed White	$3.75/	$4.00
Thirds and Blues Repacked	2.50/	2.85
Cotton Pants & Overalls	3.00/	—
No. 1 Roofing Stock	1.15/	1.25
No. 2 Roofing Stock	1.10/	1.15
Roofing Bagging	.85/	—

Bagging

(F.o.b. Eastern Shipping Point)

Old Manila Rope	4.50/	—
Foreign Gunny No. 1	8.00/	—
Domestic Gunny No. 1	8.00/	—
Sisal Strings No. 1	3.75/	—
No. 1 Scrap	5.50/	—
No. 1 Jute Rope	6.75/	7.00

BOSTON

Bagging

(F.o.b. Boston)

(Per 100 lbs.)

Foreign Gunny	8.50	/ 9.25
Domestic Gunny	8.75	/ 9.75
Domestic No. 1 Old Rope	6.50	/ —
Foreign No. 1 Old Rope	6.50	/ —
Mixed Strings	1.42	/ —
Transmission Rope—Domestic	3.00	/ 3.50
Jute Carpet Threads	—	/ 4.00
Bleachery Burlap	—	/ 9.00
Scrap Burlap—		
Foreign	6.75	/ 7.00
Domestic	—	/ 7.75
South America	8.25	/ 8.50
Austr. Wool Pouches	8.25	/ —
New Zealand Wool Pouches	—	/ 7.80
New Burlap Cuttings	8.50	/
Heavy Baling Bagging	—	/ 7.50
Paper Mill Bagging	—	/ 6.75

Domestic Rags (New)

(F.o.b. Boston)

(Per 100 lbs.)

New Light Prints	—	/ 6.50
Fancy Percales	—	/ 6.50
White No. 1 Shirt	10.25	/10.75
Light Flannelettes	—	/ 7.00
Canton Flannels, Bleached	—	/ 9.00
Underwear Cutters, Bleached	10.50	
Underwear Cutters, Unbleached	10.00	/10.25
Blue Overalls	6.50	/ 7.00
Soft Unbleached	10.00	/10.75
Blue Cheviots	—	/ 7.00
Fancy Shirt	5.00	/ 5.25
Washable	5.00	/ 5.25
Khaki Cuttings	5.00	/ 5.25
Men's Corduroy	4.50	/ —
Khaki Canvas	—	/ 5.50
B. V. D. Cuttings	10.00	/10.25

Domestic Rags (Old)

(F.o.b. Boston)

Per 100 lbs.

No. 1 Whites, Repacked	$4.00	/ —
No. 1 Whites, Miscellaneous	3.00	/ 3.75
Twos and Blues, Repacked		2.25
Cotton Pants & Overalls	3.00	3.25
No. 1 Roofing Stock	1.40	/ —
No. 2 Roofing Stock	1.30	/ —
No. 3 Roofing Stock	—	/ 1.00
No. 4 Roofing Stock	.90	/ —
Roofing Bagging	—	/ .80
Old Manila Rope	6.00	/ —

Markets

Blanc Fixe

Supply ample. Prices firm. Currently quoted at $85.00 in bags, car lots, at works, 6 cents per pound, l.c.l., deld. By-product supply somewhat restricted. Quoted at $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

Bleaching Powder

Steady improvement in supply. Demand and prices steady. Prices range from $4.25 to $4.75 per 100 pound drums, l.c.l., works.

Casein

Demand light. Argentine market weakened by shortage of foreign exchange. Heavy U. S. Govt. purchases may firm domestic market. Current prices on processed acid precipitated casein at 23 to 28 cents per pound for domestic grades and 22¼ to 23 cents for imported grades, f.o.b. shipping point.

Caustic Soda

Demand eased. Supply adequate for prompt shipment. Prices firm. Solid caustic is reported at $3.05 per cwt. flaked and ground is quoted at $3.45 per cwt., in 400 pound drums, $3.95 per cwt. in 100 pound drums—car lots at works; liquid 50 percent in tank cars at $2.40 per cwt.; liquid 73 percent in tank cars at $2.50 per cwt., at works.

China Clay

Demand easier, supply of domestic and imported ample. Prices firm. Domestic filler quoted at $10 to $12.50 per ton, car lots, f.o.b. mines. Coating clay is $15 to $25. Imported clay quotation, short tons, $16 to $35, export warehouse.

Chlorine

Supply condition favorable. Demand moderately strong. Prices firm. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt. in multi-tank cars, f.o.b., works.

Rosin

Inquiry good following price drop, but trading deferred until situation jells. Prices close to loan level. Gum rosin in drums per 100 pounds net in car lots, f.o.b., Savannah; B, G, H, I, K, $5.85; Wood rosin per 100 pounds net, car lots, f.o.b. Savannah; B, $4.50; FF, $6.00.

Rosin Size

Supply good. Demand steady. Seventy percent gum and pale wood grades, tank cars, $5.15 to $5.25, f.o.b. southern shipping point.

Salt Cake

Easing of demand and steady production brings ample supply condition. Prices steady. Domestic quoted at $27.00, f.o.b. shipping point, freight allowed to destination.

Soda Ash

In free supply. Demand easier. Prices firm. Current prices, car lots per 100 pounds; in bulk, $1.15; in paper bags, $1.40; and in barrels, $1.90.

Sodium Bicarbonate

Supply ample. Demand good. Prices firm. Reported at $1.95 per cwt. paper bags, carload lots.

Starch, Corn

Buying stimulated by assurance of firm price to April 4. Demand strong. Delivery good. Pearl grade quoted at $4.67 per 100 pounds; powdered starch at $4.78 per 100 pounds; car lots, f.o.b. Chicago.

Starch, Potato

Brisk industrial demand. Maine market still uncertain awaiting Govt. action. Idaho supply improved; price firm. High grade quoted at $4.75 cwt. f.o.b. Idaho; $5.00 f.o.b. Maine; Pearl grade, $4.50/$4.75 cwt. f.o.b. Maine.

Sulphate of Alumina

Supply good. Demand steady. Prices firm. The commercial grades are quoted from $1.50 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.50 per 100 pounds in bags, car lots, at works.

Sulphur

Demand sustained at good level. Supply good. Prices firm. Annual contracts are quoted at $18 per long ton, f.o.b. mines; $19.50, f.o.b. vessels, Gulf ports. Export price f.o.b. Gulf ports is $22.00 per long ton.

Talc

Prices steady. Demand continues ahead of supply. Improvement due this year. Domestic grades are currently quoted at $23 per ton in paper sacks, f.o.b. mills; Canadian at $35 and up per ton. All prices in car lots.

Tapioca Flour

Supplies tighter on all grades. Demand fair. Prices steady. Superior high range from $10.25/$11.50 cwt.; high grades $9.25 cwt., on dock Atlantic and Gulf ports; medium grades range from $6.00/$7.50 cwt. on dock, N. Y. Coarse pearl grades, $5.00/$5.50 cwt. on dock N. Y.

Titanium Dioxide

Supply reported now in balance with eased demand. Prices firm. Anastase 19½c pound carload lots, 20c l.c.l., rutile, 21½c pound carload lots, 22½c l.c.l.; 50-pound bags, f.o.b. plant, actual freight allowed.

Financial Record

Preferred Stocks	Per Share Earnings Calendar Year 1947	Per Share Earnings Calendar Year 1948	Indic. Annual Divid. Rate	March 22 Approx. Market Price
Armstrong Cork Co. $3.75 Cum.	$38.64*	$46.33*	$3.75	98½
Armstrong Cork Co. $4.00 Cum. Conv.	38.64*	46.33*	4.00	109
Celotex Corp. 5% Cum.	24.25c	21.22g	1.00	17
Champion Paper & Fibre $4.50 Cum.	65.90f	61.80j	4.50	93¼
Container Corp. of Amer. 4% Cum.	102.74	105.41	4.00	96½
Crown Zellerbach $4.20 Cum.	56.40f	63.54g	4.20	95⅛
Crown Zellerbach $4.00 Cum. Conv. 2nd	53.96f*	60.21g*	4.00	94½
Dixie Cup Co. $2.50 Cum. Conv. Cla	9.16	10.10	2.50	51
Flintkote Co. $4 Cum.	81.91	83.25	4.00	99¾
Robert Gair Co., Inc. 6% Cum.	20.11	17.08	1.20	16⅜
International Paper Co. $4 Cum.	236.51	242.27m	4.00	97⅜
Johns-Manville $3.50 Cum.	128.81	209.89	3.50	109¾
Kimberly Clark Corp. 4½% Cum.	70.03	82.79m	4.50	104
Kimberly Clark Corp. 4% Cum. Conv. 2nd	41.60*	49.18*m	4.00	99
MacAndrews & Forbes 6% Cum.	62.20	59.89m	6.00	138¼
Mead Corp. 4¼% Cum.	81.56	80.43m	4.25	77½
Mead Corp. 4% Cum. Conv. 2nd	33.62*	32.68*m	2.00	31¼
Paraffine Cos. Inc. 4% Cum. Conv.	152.76a	156.11	4.00	103
Rayonier Inc. $2 Cum.	13.58	16.43	2.00	33¼
St. Regis Paper Co. 4.40% 1st A	76.93	79.90	4.40	82½
Scott Paper Co. $3.40 Cum.	43.95	59.06	3.40	94
U. S. Gypsum Co. 7% Cum.	211.34	314.45	7.00	179½
United Wallpaper Inc. 4% Cum. Conv.	(d)1.35a	(d)0.79	2.00	22⅞
West Virginia Pulp & Paper 4½% Cum.	75.75c	81.01g	4.50	106
Common Stocks				
APW Products Co.	$1.24	$1.32m	$0.25	3⅛
American Writing Paper Corp.	1.61	(d)0.15	0.25	5⅜
Armstrong Cork Co.	6.41	7.54	3.00	45¼
Celotex Corp.	6.59c	5.73g	2.00	21¼
Certain-Teed Prods. Corp.	3.75	4.02	1.15	12
Champion Paper & Fibre	5.57f	6.99j	2.00	21⅝
Congoleum Nairn Co.	4.55	5.78	2.25	29¼
Container Corp. of America	10.09	10.12	4.50	34
Crown Zellerbach	6.81f	7.26g	2.00	24⅛
Dixie Cup Co.	5.87	6.70	1.00	27
Eastern Corp.	5.02	4.76	1.00	12¼
Flintkote Co.	6.27	5.86	2.50	25
Robert Gair Co., Inc.	3.18	2.67	0.70	6
Great Northern Paper Co.	4.56	4.55m	2.80	38⅝
International Paper Co.	15.02	15.39m	5.00	48
Johns-Manville Corp.	3.17	5.22	2.00	37
Kimberly-Clark Corp.	4.29	5.16m	1.65	19¼
MacAndrews & Forbes Co.	3.68	3.53m	2.50	32⅝
Marathon Corp.	3.39c	4.08g	1.40	20
Mead Corp.	7.33	7.11m	2.00	15
National Container Corp.	4.13	2.28	0.80	7⅜
Paraffine Cos. Inc.	2.40a	2.45	1.20	17½
Rayonier, Inc.	7.30	9.09	2.00	26½
Ruberoid Co.	9.89	11.80	3.25	49⅝
St. Regis Paper Co.	2.66	2.71	0.80	8¼
Scott Paper Co.	3.02	4.15	2.50	48⅜
Sutherland Paper Co.	6.87	6.02	2.50	31½
Taggart Corp.	1.29	N.A.	0.60	10⅜
Union Bag & Paper Corp.	7.93	9.17	4.00	28
United Board & Carton	4.95h	0.73h	(e)	5¼
U. S. Gypsum Co.	10.00	15.04	6.00	99¼
United Wallpaper	(d)0.11a	(d)0.10	(n)	3⅛
West Virginia Pulp & Paper	11.40c	11.51g	4.00	37¼

(a) Year ended 6/30/48
(b) Year ended 5/30/48
(c) Year ended 10/31/47
(d) Deficit
(e) Omitted dividend 2/4/49
(f) Year ended 4/30/48
(g) 12 months to approximately 1/31/49
(h) 12 months to 2/5/49
(j) 8 months to 12/31/48
(m) 12 months to approximately 9/30/48
(n) Last payment 25c, 9/16/47
(*) Pro forma—Earnings per combined preferred shares.
(N.A.) not available

Dividends Declared

Simplex Paper Corp., Adrian, Mich., on March 7 declared a quarterly dividend of 20 cents per share, payable April 9 to holders of record, March 21.

How Fraser Dollar Splits

OTTAWA—Distribution of the 1948 fiscal year sales dollar of the Fraser Companies shows 22c going to materials, 31.6c employes, 13.4c government, 10.6c transportation, 5c depreciation and depletion, 1.1c insurance and miscellaneous, 5c to bondholders, 3c to directors and executive officers, 4.6c common stock dividends, and 10.9c left in the business.

Specialists Address Students

ORONO, Me.—University of Maine students studying pulp and paper mill equipment and paper technology have had an opportunity to hear talks by several specialists in these fields during the past few weeks.

The talks, arranged by Professor Lyle C. Jenness, head of the department of chemical engineering, will continue in April after the spring recess.

Those who have recently spoken to the group in pulp and paper mill equipment and their subjects are Parkman Collins of the Parkman A. Collins Co., Boston, "Pumps and Pumping Problems"; Fred Stetson, assistant chief engineer, Eastern Corp., Brewer, Mass., "Power Generation and Distribution"; J. A. Stone, industrial division, General Electric Co., Boston, "Electric Motors and Starting Equipment"; E. F. Tucker, vice-president, Stebbins Mfg. Co., Watertown, N.Y., "Digester Linings"; C. B. Muzzy, sales engineer, E. D. Jones & Son Co., Pittsfield, Mass., "Beaters, Jordans."

Lecturers before the group in paper technology have included Dr. F. B. Schelhorn of the Brown Co., Berlin, N.H., "Stock Preparation—Beaters and Refining"; Olin W. Callighan, salesman, Edgar Brothers Clay Co., Kalamazoo, Mich., "Loading and Fillers"; Fred A. Soderberg, director of paper service and development, General Dyestuff Corp., New York City, "Color Engineering"; John Turbyne, beater room foreman, Hollingsworth & Whitney Co., Waterville, "Sizing"; A. M. Lund, vice-president, Hudson Pulp & Paper Co., Augusta, Maine, "Paper Machines—Wet End Sheet Formation."

Canadian Carloadings

OTTAWA—Car loadings on the Canadian railways of woodpulp and paper from the beginning of this year until the week ending March 5 fell to a total of 40,132 cars compared with 40,395 cars in the corresponding period last year ending week of March 6, according to the latest nationwide survey by the Canadian Government. The Eastern Division accounted for 34,987 cars this year compared with 35,091 a year ago and the Western Division for 5,145 cars as against 5,302 cars last year during the same period.

St. Croix Stock Split

BOSTON—St. Croix Paper Co. stockholders at the annual meeting voted to decrease the par value of the firm's capital stock from $100 to $25 per share and to increase the number of authorized shares from 30,000 to 120,000.

Equipment & Supplies

Flame-Seal Paint

Flame-Seal is announced as fire-retardant, non-toxic paint and coating which resists 2,000 deg. F. flame for 30 minutes. Described as easy to handle, it comes ready to use, requires no mixing of special ingredients, and

Before fire started — "A" half of house unpainted. "B" half painted with Flame-Seal.

Three minutes later — Fire spreads through unpainted "A" half of house. Protected "B" half shows no sign of combustion.

Eight minutes later — Unpainted "A" half of house is now a charred and smoke. "B" half of mass of burned wood house still has not supported any flame or given off any smoke.

Sixteen minutes later— Entire "A" half of house has collapsed — completely consumed by fire. "B" half of house, protected by Flame-Seal still stands undamaged.

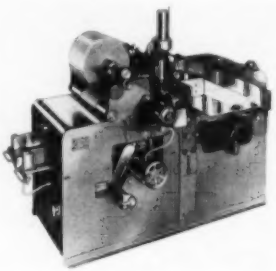
can be applied directly from original container by brush or spray-gun. Company spokesman reports that tests show paint generates no smoke or toxic gases when attacked by fire and gives off no toxic fumes while being applied. He states that when unpainted lumber is protected with a coating of Flame-Seal, the wood can withstand a 2,000 deg. F. blow-torch for 30 minutes without flame spread; also that similar laboratory tests made after paint was applied to typical fast-burning woods such as Douglas Fir, Idaho, ponderosa and yellow pine were successful. When fire attacks wood coated with the paint, it is stated that a white crust forms which creates a hard protective wall at least eight times the thickness of the original coating. Sustained exposure to intense heat of blow-torch flame for more than 30 minutes will result in some charring, it is stated, but that at no time will the coating support combustion. Manufacturer also states that paint is moisture and termite-proof, will not craze, chip, peel or crack, and can be washed with any standard soap or washing powder without lessening its fire-retardant effectiveness. He recommends his product as ideal protective coating on wood walls, ceilings, basements, attics, stairwells, dumbwaiters, kitchens, barns, stables, churches, schools and ships, and on all interior raw wood surfaces. Comes in an oyster-white flat finish in single quarts, 2 and 5 gallon cans and 55 gallon drums. For details and prices write to Stallton Chemical Corp., 8-14 37th avenue, Long Island City, 1, N.Y.

Anodex HR Latex

Anodex HR Latex was developed for coating applications requiring a compound for high heat resistance, good chemical resistance, high elongation and high tensile strength. Articles coated, dipped, sprayed or brushed with the compound are said to possess the ability to withstand temperatures to 400 deg. F, retention of tensile strengths to 2500 psi, and elongations to 1000 percent. Potential applications include heat resistant coatings for textiles and fabrics such as radiator hose fabric, ironing board covers, insulating tapes and papers, heat and oil resistant gaskets, hose, belting, oil seals, and other mechanical applications, manufacturer states. For details and prices write to American Anode, Inc., 60 Cherry street, Akron, Ohio.

Morpac Improvements

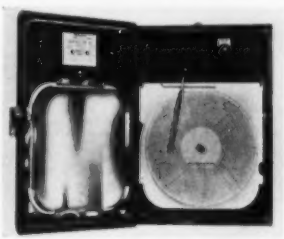
Morpac—paper packaging machine—improvements are designed to simplify construction, operation and maintenance. Among the announced new features are: new size ranges, ring type pistons, ground and honed cylinders,



direct action air valves, cast aluminum seal mechanism, positive wrapper control, quick size change, reduction of electrical circuit by over 50 percent. Developed exclusively for the graphic arts industry, Morpac wraps or bands ream paper, tablets and pads, loose leaf fillers, books of all kinds, and almost any rectangular object within its size range, the manufacturer states. Also will handle packages to 5 ins. deep, 10 ins. wide and 14½ ins long. The Morpac is said to be particularly adept at paring costs for one operator, wrapping up to 1,000 packages an hour, to have from 30 to 40 percent per package on wrapper application, and to turn out tightly-wrapped, uniform packages with neat corner and edges. For details and prices write to Lynch Corp., Package Machinery Div., Toledo, Ohio.

Running Count Recorder

Running Count Recorder was developed for use on production machinery to record work-producing operations or number of pieces produced. It plots on a circular chart a curve of number of operations against time, and



records the total count of intermittant operations and the time at which each one occurs. Total number of operations or pieces produced can be found by multiplying number of complete pen tranverses across the chart by the count per tranverse for which instrument is calibrated, it is stated. Hourly rate of production can be easily read from chart, also excessive down time. Instrument is designed as a basis for paying production employees and as a source of information regarding effect of fatigue on operators, variations in productibility between operators, effectiveness of job-training programs, and effect of variations in working conditions. For details and prices write to Bristol Co., Sales Promotion Dept., Waterbury 91, Conn.

Polyco 296

Polyco 296 is described as a synthetic, non-creaming thickener for natural and synthetic latex based upon acrylate copolymers which can be diluted with hot or cold water to provide higher viscosities at lower concentrations than most commercial thickeners. Because of its unique chemical composition, manufacturer states that it is not subjected to the rotting, scouring and mildewing usually encountered with naturally derived gums, proteins and starches; also that it will not support bacteria growth, is non-oxidizing, non-yellowing, stable in the presence of heat, resistant to oils, fats, greases and alphatic solvents. He recommends the product as an additive to thicken latices and resin emulsions for textile printing, pastes and sizes, as a flexible film formed to render paper, leather and plastic films acid and oil resistant, as a protective cololid for many types of emulsions and dispersions, also for wide use in dipping, saturating and coating operations. For details of wider uses, write for data sheet P-6 to American Polymer Corp., 101 Foster street, Peabody, Mass.

Minor Neff Now V. P.

DAYTON, Ohio—Minor F. Neff has been elected vice-president and assistant general manager of the Gebhart Folding Box Co. Robert C. Neff was re-elected president and general manager, and C. J. Wahl was re-elected vice president in charge of sales.

Minor Neff's election marked the beginning of his 21st year of service with the firm.

Tanglefoot Realty Deals

GRAND RAPIDS, Mich.—The Tanglefoot Co., has sold the east portion of its property at 314 Straight avenue, S.W., to Joe Brown & Sons, scrap metal and waste paper dealer. The latter firm has leased the building on the property to the Grand River Paper Corp., which last December purchased Tanglefoot's paper converting division and will use the land remaining for scrap storage. Tanglefoot has leased space in its plant to the Columbian Storage Co., American Child Furniture Co., and Commercial Photo Service.

Bird Plant Addition

EAST WALPOLE, Mass.—Bird & Son, Inc., is erecting a two-story 30 x 300 foot manufacturing building joining two other buildings of the company in Norwood, Mass. The first floor will provide manufacturing space for making asphalt roofing and building products.

Nanaimo Blchd. Sulphate

VANCOUVER, B.C.—The H. R. MacMillan Export Co. will add a $3,750,000 bleached sulphate plant to the $13,000,000 mill project of its wholly owned subsidiary, Nanaimo Sulphate Pulp, Ltd., at Nanaimo, President H. R. MacMillan discloses. Intended to operate for some time producing only unbleached sulphate, it is now planned that from the outset the mill will make bleached pulp.

Creighton Deputy Minister

HALIFAX, N. S. — George W. I. Creighton has been appointed Deputy Minister of Lands and Forests for the Government of Nova Scotia.

INDUSTRIAL PRODUCTION, BY INDUSTRIES

(Without Seasonal Adjustment)

[Index numbers of the Board of Governors. 1935-39 average = 100]

Source: Federal Reserve Bulletin, February, 1949

	1947	1948										
Industry	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Paper and Paper Products	*157*	*163*	*163*	*167*	*169*	*170*	*165*	*149*	*165*	*165*	*172*	*169*	*155*
Paper and pulp	152	157	159	160	163	164	160	145	160	159	167	163	149
Pulp	168	174	178	179	182	188	183	170	191	181	194	189	173
Groundwood pulp	97	91	98	96	107	112	107	104	107	103	109	110	107
Soda pulp	107	109	110	103	108	112	111	96	110	107	111	107	104
Sulphate pulp	255	276	269	285	293	309	301	283	328	301	330	317	285
Sulphite pulp	148	151	161	153	151	151	146	135	148	145	153	149	137
Paper	150	155	156	157	160	160	156	141	155	156	163	159	146
Paper board	177	187	179	192	192	191	187	165	184	189	193	195	167
Fine paper[1]	86	86	88	85	87	86	86	74	83	83	...	...	...
Printing paper	162	162	170	161	166	169	168	150	160	161	172	165	160
Tissue and absorbent paper	153	161	167	161	173	169	160	151	161	163	172	162	153
Wrapping paper	139	145	150	148	151	150	145	135	153	148	157	150	142
Newsprint	87	82	83	82	91	95	93	91	95	93	96	95	98
Paperboard containers (same as Paperboard)	...	...	...	...	...	...	...	...	...	...	...	...	...

[1] This series is in process of revision.

NOTE.—For description and back figures, see BULLETIN for October 1943, pp. 940-984, September 1941, pp. 878-881 and 933-937, and August 1940, pp. 753-771 and 825-882.

HOURS AND EARNINGS OF PRODUCTION WORKERS IN MANUFACTURING INDUSTRIES

[Compiled by the Bureau of Labor Statistics]

	Average hours worked per week							Average hourly earnings (dollars per hour)						
	1947		1948					1947		1948				
Industry group	Oct.	Nov.	Ju'y	Aug.	Sept.	Oct.	Nov.	Oct.	Nov.	July	Aug.	Sept.	Oct.	Nov.
All manufacturing	*40.6*	*40.4*	*39.8*	*40.1*	*39.8*	*39.9*	*39.7*	*1.258*	*1.269*	*1.332*	*1.349*	*1.362*	*r 1.365*	*1.371*
Durable goods	*40.9*	*40.7*	*40.0*	*39.7*	*40.0*	*r 40.8*	*40.3*	*1.337*	*1.346*	*1.407*	*1.431*	*r 1.448*	*1.451*	*1.452*
Nondurable goods	*40.2*	*40.1*	*39.5*	*39.5*	*39.6*	*39.1*	*39.1*	*1.175*	*1.185*	*1.252*	*1.262*	*1.272*	*1.272*	*1.282*
Paper and allied products	43.0	43.2	42.5	43.1	42.7	42.9	42.9	1.215	1.222	1.317	1.320	1.334	*r* 1.329	1.337

r Revised.

NOTE.—Preliminary December 1948 figures for average weekly hours and hourly earnings are: All manufacturing, 39.9 and 1.378; Durable, 40.7 and 1.459; Nondurable, 39.1 and 1.288, respectively. Back figures are available from the Bureau of Labor Statistics.

FACTORY EMPLOYMENT AND PAY ROLLS, BY INDUSTRIES

(Without Seasonal Adjustment)

[Index numbers of the Bureau of Labor Statistics, 1939 = 100]

	Factory employment							Factory pay rolls						
	1947		1948					1947			1948			
Industry group or industry	Nov.	Dec.	Aug.	Sept.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Aug.	Sept.	Oct.	Nov.
Paper and Allied Products	*148.6*	*149.9*	*148.6*	*149.8*	*151.0*	*151.7*	*151.3*	*320.5*	*328.9*	*334.0*	*352.1*	*355.0*	*357.4*	*362.2*
Paper and pulp	146	147	150	150	150	150	....	323	325	333	364	363	359	365
Paper goods, n.e.c.	168	169	164	166	168	169	....	344	353	362	365	372	381	393
Paper boxes	143	144	137	140	144	146	..	304	315	322	319	328	342	345

Australia

Imports of newsprint in November totalled 7,858 tons, while imports of other printing papers amounted to 28,844 cwt. (hundredweights of 112 pounds).

Details of printing paper imports were: (all hundredweights)—Imitation art, 1,034 (U.K. 799, Sweden 235); machine processed coated, 432 (all from U.K.); other coated papers, 2,127 (Finland 1,490, U.K. 578, Norway 59); offset, 40 (all from U.K.); lithographic machine glazed, 1,139 (Sweden 657, U.K. 482); esparto one side supercalendered, 168 (all from U.K.); other one side super-calendered, 1,150 (all from U.K.); two-sided super-calendered, 4,404 (all from Finland); machine finished, 501 (Sweden 392, U.K. 65, Norway 44); magazine and other printing, 12,134 (Sweden 8,386; U.K. 1,580, Norway 1,043, U.S.A. 576, Finland 549); glazed imitation parchment, 224 (Finland 222, Norway 2); and other printing papers, 4,108 (Norway 3,680, U.K. 262, Sweden 166).

Whereas the import figures (in hundredweights) from the United States were down to 9 in June, 5 in July and Nil in August, in September they were up to 3,809; in October to 2,075; and November total was 576.

Revised estimate for 1949 of reel newsprint imports, plus production from Tasmanian mills is: Original license ex North America, 41,800 tons; less Newfoundland diversion, 15,000 tons; total North American newsprint 26,800 tons. U.K. ex Board of Trade pulp, 12,000 tons; U.K. ex Newfoundland pulp, 20,000 tons; total U.K. newsprint, 32,000 tons. Scandinavian and Continental, 65,000 tons. Expected from U.K. late in the year, 25,000 tons. Total possible overseas newsprint, 148,000 tons. Plus Tasmanian output, 31,500 tons. Giving a grand total for consumption during the year of 180,300 tons. In addition reserved stocks may be brought into use. By 1950-51 it is expected that the annual production of newsprint from the mills at Boyer (Tasmania) will be increased from 33,000 tons to 80,000 tons. (Original output goal of the mills was 26,000 tons yearly).

* * *

Gratified by a plan whereby New Zealand Forest Products, Ltd., is to send 12,500 tons of pulp to Australian Newsprint Mills, Pty., Ltd., yearly, the chairman of this company says that he looks forward to vast developments in export "to the displacement of North American pulp." He adds that arrangements have now been made to increase the size of the pulp mill from 10,000 tons to 25,000 tons a year, as the contract with A.N.M. is to continue until 1968. "The cost of this extension will be £800,000," he states, "and this money is being advanced to the company by an Australian financial institution on the security of a second debenture, guaranteed as to principal and interest by A.N.M."

* * *

Present total consumption in Australia and New Zealand is approximately 300,000 tons of newsprint and 40,000 tons of kraft pulp, in addition to pulp and paper imported for other purposes, says *Newspaper News*, in commenting upon the New Zealand scheme, and the newspaper adds: "We have no doubt that every ream of paper, every bale of pulp and every ton of newsprint now imported from overseas sources could be produced in New Zealand if an enterprising and determined effort is made by the New Zealand and Australian Governments, pulp and paper manufacturers, and forest owners."

* * *

Principal problem faced in Australian and New Zealand production fields today is that of labour, and the Commonwealth Department of Labour and National Service points out that shortage at the moment includes 800 for forestry, 12,200 miscellaneous manual workers, and no less than 70,200 tradesmen.

As far as local industry is concerned, some idea of what may face the Australian employer in the near future if certain Communist-inspired trades unions get their way may be gauged from a log which was recently presented to the Arbitration Court by ten New South Wales unions. This called for: A minimum basic wage of £10 (approximately $32.25 at current rate of exchange) for unskilled labour; a reduction of weekly working hours to 30; an "ndustry allowance" of 14s. ($2.20) a week for all employees; equal pay for both sexes; a 25 per cent premium for all shift workers; double-time overtime for shift workers; the total abolition of all piecework; three weeks' sick leave on full pay; and four weeks' annual leave to be increased to five weeks after five years' service. Employers state that should such rates and conditions be granted they will have no option but to close down.

* * *

The Prime Minister (Mr. Chifley) states that the Federal Government does not see any prospect of major relaxations of dollar import restrictions for at least five years "or possibly longer." He adds that no machinery or goods will in future be admitted duty-free to Australia if they are cheaper than the Australian-made articles.

* * *

Wrighteel, Ltd., transparent packaging specialists, of South Melbourne, has converted to a public company. Nominal capital will be £250,000.

Would Give P. Q. Mill

QUEBEC—Acquisition by the Quebec government of the long-closed Quebec Pulp & Paper Corp., newsprint mill at Chicoutimi is provided for in legislation introduced in the Quebec House. The measure authorizes the government to acquire the corporation's property, believed mainly to consist of the mill, and empowers the Minister of Lands and Forests to cede, sell, lease or exchange the whole or part of the property.

Bonus to Workers

CARTHAGE, N. Y. — Annual bonuses have been awarded to approximately 350 workers in the Carthage Paper Makers mill in West Carthage and the Climax Mfg. Corp. of Castorland, Charles H. Hirschey, president of the two companies, reports. The bonuses are awarded on the basis of the net profits of the companies for the past year.

Directing Fine Papers

ST. LOUIS—The Graham Paper Co. has placed S. E. Chamberlin, vice-president, in charge of all fine paper operations. For the past year, he has been in charge of Graham's merchandising of book paper, cover paper, and newsprint. Prior to that time he was St. Louis city sales manager for 11 years.

New K-C Building

NIAGARA FALLS, N. Y.—Construction of a five-story warehouse at the Niagara Falls plant of Kimberly-Clark Corp. is expected to begin in the near future. The new building, which will be used to store finished products of the local plant, is scheduled for completion by December 1.

Atlanta Realty Transfer

ATLANTA—The Atlanta Paper Co., of which Arthur Harris, Jr., is president, has sold its building at 225 Moore street, S.E., to the newly organized General Industrial Corp. The company has a new building under construction at Marietta and Ashby streets, N.W.

Win State Safety Honors

BUFFALO, N. Y. — The Certain-teed Products Corp., Robert Gair Co., Inc., and International Paper Co., were Buffalo area paper firms winning top honors in the annual accident prevention campaign sponsored by Associated Industries of New York State.

Three New Warren Directors

Walter H. Wilcox, sales manager; Dr. Frederick H. Frost, head of the Company's research laboratory; and Wesley P. Heilman, district sales manager for the New York area, were elected directors of the S. D. Warren Co. early this month.

Joins Woodlands Dep't.

ERIE, Pa. — After five months in a consultant capacity, Ray F. Bower has become a permanent member of the woodlands department of the Hammermill Paper Co. His work will be in connection with local pulpwood supplies.

control microorganism damage

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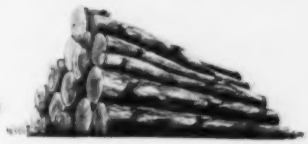

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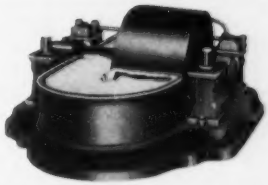

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Army-Navy

N.Y. Purch. Office

Army Invitations To Bid

QM-30-280-49-1021—Paper, Carbon, Duplicator, Purple, and Typewriter, Carbon, Black, Various sizes—20,479 boxes. Paper, Typewriter—various—23,474 reams. Bids will be opened 18 March 1949 at the New York office. Delivery: to be completed by 30 June 1949. This procurement is for the U. S. Army (National Guard).

QM-30-280-49-1022—Paper, Map, White, High Wet Strength, Non-Fluorescent—1500 reams. Bids will be opened 17 March 1949 at 2:30 PM (EST) at the New York office. Delivery: to be completed 1 May 1949. (If unable to comply delivery by 15 May 1949 will be considered.) This procurement is for the U. S. Air Force.

QM-30-280-49-1029—Cushioning Material, Asbestos Fiber—254,000 lbs. Paper, corrugated, cush, mat'l—5,000 rolls. Bags (Various sizes) for packaging—1,991,200 each. Barrier, Mat'l, moisture-vaporprf.—1,600 rolls. Bids will be opened 15 March 1949 at 2 PM (EST) at the New York office. Delivery: bidder to state best delivery. Procurement is for the U. S. Army.

QM-30-280-49-1020 — Paper, Map, Hi-Wet Strength—various sizes, and Paper, Index—(various)—710,200 reams. Bids will be opened 14 March 1949 at 1:30 PM (EST) at the New York office. Delivery: to be completed during July 1949. This procurement is for the U. S. Army.

QM-30-280-49-1045—Paper, Photostat, Grade—R, 350' long, 18" wide or equal—48 rolls. Bids will be opened 28 March 1949 at 2 PM (EST) at the New York office. Delivery: to be completed during July 1949. Procurement is for the U. S. Army.

QM-30-280-49-1047 — Tape, Blank recording, teletype, etc.—970,000 each. Bids will be opened 25 March 1949 at 2 PM (EST) at the New York office. Delivery: state best delivery.

QM-30-280-49-1049—Paper, Corrugated, Single Face Flexible (48")—3,000 rolls. Paper, Waxed, Shredded, 100 lb. Bale—100,000 lbs. Paper, Kraft #2, various sizes—19,800 lbs. Wadding, absorbent, 20 lb.—4,900 lbs. Bids will be opened 28 March 1949 at 1 PM (EST) at the New York office. Delivery: to be completed during September 1949. This procurement is for the U. S. Army.

QM-30-280-49-1050 — Folders, File, Manila, Vetrical Flat Type, Plain, bottom heavy 100 per box, various sizes—17,150,000 each. Bids will be opened 28 March 1949 at 10 AM (EST) at the New York office. Delivery: during October and September 1949. This procurement is for the U. S. Army.

QM-30-280-49-1051—Covering Paper, Teletype Machine, Perforated Sides 8½ x 5½" (one staple required in control margin) Part #4, and Part #5, and Part #6. Quantity: 2,000,000 sets. Bids will be opened 28 March 1949 at 1 PM (EST) at the New York office. Delivery: to be completed to all destinations during October 1949. This procurement is for the U. S. Army.

QM-30-280-49-1092—Paper, Typewriter, Manifold, Sulphite, Sub. 9, Green 8 x 10½"—25,000 reams. Paper, Typewriter, Pink, 8 x 10½"—10,000 reams. Bids will be opened 5 April 1949 at 3:30 PM (EST) at the New York office. Delivery: to be completed by 31 October 1949. This procurement is for the U. S. Army.

QM-30-280-49-1097 — Paper, Music Writing, Medium, 12 Stave—12,500 sheets. Paper, Music Octave—12 stave—6,000 sheets. Paper Music Scoring—24-stave—12,500 sheets. Bids will be opened 5 April 1949 at 3 PM (EST) at the New York office. Delivery: to be completed during August 1949. This procurement is for the U. S. Army.

QM-30-280-49-1091—Paper, Mimeograph, Woodpulp (Chemical) Sub-20 White, size 8 x 10½" —50,000 reams. Paper, Typewriter, Manifold, Sulphite, Sub-9 White 8 x 10½"—5,000 reams. Paper, 8 x13" (White)—5,000 reams. Bids will be opened 5 April 1949 at 4 PM (EST) at the New York office. Delivery: to be completed by 31 Oct. 1949. This procurement is for the Officer's Reserve Corps.

QM-30-280-49-1078—Paper, Drawing, Buff, 42" x 50 yds.—552 rolls. Paper, stencil, waxless, dry process, cellulose, white—1,074 Quire. Tape, Linen finish, red, 1/8", 72 yds.—325 spls. Bids will be opened 5 April 1949 at 1 PM (EST) at the New York office. Delivery: to be completed during June 1949. This procurement is for the U. S. Army.

QM-30-280-49-1051—Cards, Guide, Pressboard, Gray, Blank, Self-tabs, ⅓ cut—various sizes—205,000 each. Cards, Guide, Blank, Plain, Tabs, Buff, collated, ⅓ cut (100 per box)—various sizes: 2,000,000 each. Cards, Index, Filing, Chemical-Wood, 91 lb. basis, Salmon, plain and ruled; and White—various sizes (also Buff)—13,300,000 each. Bids will be opened 30 March 1949 at 2 PM (EST) at the New York office. Delivery: to be completed during Sept. 1949. This procurement is for the U. S. Army.

QM-30-280-49-1052—Bags, Paper, Kraft, Grocers, Self opening, 5 lb. and 25 lb.—21,000,000 each. Bags, Paper, Kraft, Sack, Satchel, bottom ½ BBL (60 lb. basis weight)—4,500,000 each. Paper, Wrapping, Kraft White, Semibleached 40 lb. 24" wide, 9" diameter—15,000 rolls. Paper, wrapping, wax, self-sealing, white roll form 25 lb., waxed to 38 lb. Bread wrapping machine 16"—25,000 rolls. Bids will be opened 30 March 1949 at 11 AM (EST) at the New York office. Delivery: to be completed not later than 30 Sept. 1949. This procurement is for the U. S. Army.

Army Bids Received

Eight bids have been received on QM-30-280-49-883 covering Cards, Guide and Index (Various sizes). Directive quantity—4,775,000 each; total quantity on all bids received: 10,596,500 each. Price range from $.0008 to $4.35M. This procurement is for the U. S. Army.

Twenty-five bids have been received on QM-30-280-49-840covering Case, Liner and Pads. Fiberboard (various sizes). Directive quantity on Case, Liner—162,000 each; total bids received: 1,881,000; directive quantity on Pads—181,750 each; total bids received: 1,817,500 each. Price Range—Cases—from $.06545 to $.6820; Pads—from: $39.51 M to 14.08. This procurement is for the U. S. Army.

Army Awards Made

QM-30-280-49-841 covering Paper Cups and Paper Plates, to:

Raycarr Sales Co., 522 Fifth Avenue, New York City—557,600 each—Cups, Drinking, flat bottom @ $.00299; 4,000,000 each Cups, Drinking, hot liquid @ $.00888.

Dixie Cup Co., Easton, Pa.—612,000 each—Cups, Drinking, flat cottom @ $.00299.

Atlanta Paper Co., Atlanta, Ga.—190,400 each, Cups, Drinking, flat bottom @ $.0299.

Continental Can Co., Paper Convertnig Div., Newark, N. J.—6,375,000 each Cups, drinking, paper, hot liquid @ $9.05 per M.

Directive quantities were: Cups, Drinking, flat bottom—1,360,000 each. Cups, Drinking, hot liquid—8,300,000 each. Plate, paper 9"—4,510,000 each. This procurement is for the U. S. Army.

One award has been made on QM-30-280-49-838 covering Containers, Ice Cream, Paperboard, 2½ gallon capacity, to Morris Paper Mills, 135 So. La Salle St., Chicago, Ill.—400,000 each at $99.50 per M. Directive quantity was 400,000 each. This procurement is for the U. S. Army.

QM-30-280-49-680 — Covering Various Paper Items, to:

Angier Corp., Farmingham, Mass. —566 rolls Paper, Wrapping @ $5.39 per roll.

Atlanta Paper Co., Atlanta, Ga.—253,000 Paper Bags, Kraft from: $.98 M to $2.94 M.

Traver Corps., Chicago, Ill.—30 each Metal Foil Bags @ $630.49 per M.

Kehr Paper Products Co., Phila., Pa.—4,900 each (various sizes) Bags, Metal Foil from: $.01133 to $.06853.

Boston Paper Board Co., Boston, Mass.—27,734 rolls (Paper, Wrapping Kraft #2) @ $.0695 per lb.

H. P. Smith Paper Co., Chicago, Ill.—116,500 each Envelope Paper—from: $.01013 to $.01278. 2,801 rolls Paper, Wrapping from: $10.04 to $15.06.

Vanant Products Inc., Tomah, Wisc.—124,500 each Metal Foil Bags @ $.0098.

Melrose Packaging, New York City—112,300 each Metal Foil Bags from: $.0173 to $.50.

A. & P. Corrugated Box Corp., Lowell, Mass. —261,400 sheets from $.054 to $.0805.

United Mineral & Chem. Co., NYC.—65,500 each Metal Foil Bags @ $.0234. 42,000 each Metal Foil Bags @ $.0377.

Old Dominion Paper Co., Norfolk, Va.—617 reams Paper, Wrapping @ $1.468.

This procurement is for the U. S. Army (Air corps).

QM-30-280-49-811 covering Memo Pads and Computing Machine Paper, to:

Boston Paper Board Co., Boston, Mass., 65,000 each Memo Pads from: $.04831 to $.05231.

Ennis Tag & Saleshook Co., Ennis, Texas, 75,000 each Memo Pads (various sizes) @ $.058.

Universal Pads and Tablet Corp., New York City, 332,500 each (Memo Pads—various sizes) from: $.05222 to $.08149.

Mohawk Tablet Co., Chicago, Ill., 782,500 each (Pads, Memo, various sizes) from: $.0528 to $.0963.

Getraer Bros. Paper Co., New York City, 4,125 rolls @ $.091 per roll.

Standard Paper Corp., New York City, 111,375 (Paper rolls) from: $.0721 to $.1195.

Lynn Paper Products Mfg. Co., Chicago, Ill., 28,000 rolls (Paper) from: $.1069 to $.121.

Directive quantity was: 9,966,000 Pads; 1,165,500 Paper (rolls). This procurement is for the U. S. Army.

QM-30-280-49-810 covering Tape (various), to:

Industrial Tape Corp., New Brunswick, N. J., 82,500 rolls Tape (various) @ $.33 and $.39.

Minnesota Mining & Mfg. Co., St. Paul, Minn., 38,500 rolls Tape (various) @ $.33 and $.39.

QM-30-280-49-840 covering Cases, Liner and Pads, Fiberboard, to:

Mammoth Paper Bags, Long Island, N. Y., 18,000 each (Cases, Liner, kraft, 40" L x 22" W) @ $.0937.

Central States Paper & Bag Co., Irvington, N. Y., 58,500 each (Cases, Liner, kraft, 40" L x 22" W) from: $65.45 M to $105.45 M.

Loroco Industries, Inc., New York City, 81,750 each (Pads, Fiberboard, solid, 32¼" L x 24¼" W) from: $39.51 M to $82.90 M.

C. T. C. Industries, Inc., Camden, N. J., 90,000 each (Cases, Liner, Waterproof, 27" L x 17½" W x 38" H) from: $.2197 to $.3503.

Navy Invitation To Bid

Inv. No. 4354—Paper, Litho, white—100,000 sheets. Bids will be opened 1 April 1949 at the New York office. Delivery: 30 days to the SupplyOfficer in Charge, Navy Recruiting Bureau, Baldwin, L. I., N. Y.

Inv. No. 4316—Tape, adhesive, pressure-sensitive—various—12,000 rolls. Bids will be opened 4 April 1949 at the New York office. Delivery: May 1949 to various destinations.

Invitations to Bid have been issued by the Navy Purchasing Office, 111 E. 16th St., New York, N. Y., on the following general supplies:

Inv. No. 4301 — Paper — mimeograph, white, type III—various—706,000 reams. Bids will be opened 23 March 1949 at the New York office. Delivery: various destinations during April and

July 1949.

Inv. No. 4349—Tape—masking—1" wide, etc. —9915 rolls. Bids will be opened 25 March 1949 at the New York office. Delivery: May 1949 to the Supply Officer, NAS, Norfolk, Va.

Inv. No. 4348—Tape, adhesive—1" wide, etc. —2,000 rolls. Bids will be opened 25 March 1949 at the New York office. Delivery: May 1949 to Supply Officer, NAS, Norfolk, Va.

Inv. No. 4300—Paper, duplicating, combination set—master and carbon, 100 sets per box—51,000 boxes. Bids will be opened 28 March 1949 at the New York office. Delivery: April and July, 1949, to various destinations.

Inv. No. 4328—Boxes, fiberboard, shipping—corrugated—various—56,600 each. Bids will be opened 28 March 1949 at the New York office. Delivery: May 1949.

Inv. No. 4332—Stencil board, for stenciling with brush, ink, oiled—20" x 24"—350,000 sheets. Bids will be opened 28 March 1949 at the New York office. Delivery: July 1949 to various destinations.

Inv. No. 4387—Paper, book, offset 36" x 48" —50,000 sheets. Bids will be opened 5 April 1949 at the New York office. Delivery: 30 days to Officer In Charge, Naval Recruiting Center, Baldwin, L. I.

Inv. No. 4362—Paper, teletype, tape—280,000 rolls. Bids will be opened 6 April 1949 at the New York office. Delivery: April and July 1947 to various destinations.

Navy Invitations to Bid

Inv. No. 4410—Paper, coated, blanks—30,000 sheets. Bids will be opened 8 April 1949 at the New York office. Delivery: 30 days to Officer in Charge, Naval Recruiting Bur., Baldwin, L. I.

Inv. No. 4372—Paper, typewriter, varied — approx. 129,800 reams. Bids will be opened 11 April 1949 at the New York office. Delivery: April, May and July 1949 to various destinations.

Inv. No. 4361—Paper, stencil-dry process—157,700 quires. Bids will be opened 6 April 1949 at the New York office. Delivery: April, June and July 1949 to various destinations.

Inv. No. 4392—Paper, blueprint—varied—200,550 lbs. Bids will be opened 11 April 1949 at the New York office. Delivery: 45-60 days to Supply Officer, Philadelphia Navy Yard, Philadelphia, Pa.

Inv. No. 4382—Paper, Duplicator, various—5350 reams. Bids will be opened 11 April 1949 at the New York office. Delivery: 45 days to various destinations.

Navy Awards Made

Inv. No. 3994—Boxes, Fiberboard, Shipping—48,540 ea. to:

Atlanta Paper Co., Atlanta, Ga.—30,200 ea. @ $.02343 to $.15920 ea. (1%-20 days).

Durham Container Co., Durham, N. C.—1900 ea. @ $.0781 ea. (1%-10 days).

Allied Container Corp., Hyde Park, Mass.—6,440 each @ $.2826 ea. (1%-30 days).

Union Bag & Paper Corp.—5000 ea. @ $.0266 ea. (1%-10 days).

J. J. Corrugated Box Corp., Fall River, Mass. —5000 ea. @ $.02745 (1%-20 days).

Inv. No. 4138—Fibreboard Containers—130,000 each, to:

Gair Bogota Corp., Bogota, N. J.—@ $.21 to $.298 each.

Container Liners—75,000 each, to: Gair Bogota Corp., Bogota, N. J.—35,000 @ $.098 (1%-10 days).

National Container Corp., L. I. C., N. Y.—40,000 @ $.04785 ea.

Inv. No. 3792—Boards, Bristol, folding—65,-900 sheets, to: Walker Goulard Plehn Co., Inc., NYC—22,300 sheets @ $.05259 (1%-10 days). Note: Directive quantity was 65,900 sheets. The balance of above amount has been cancelled.

Inv. No. 4209—Folders, File—1,537,000 each (various), to: The Warsaw Mfg. Co., Inc., Bklyn., N. Y.—61,000 sheets @ $.042 to $.048. P. L. Andrews Corp., Bklyn., N. Y.—1,476,000 sheets @ $.02686 to $.03309 (1%-30 days).

Marinette Personel Changes

FORT EDWARD, N. Y.—John B. Hay, general manager of the Marinette Paper Co. plant here, reported several organizational changes on March 17 effective immediately.

Charles F. Kalmbach, purchasing agent, will continue to direct the purchasing department, and in addition, he has taken on a temporary special assignment for the general manager in which he will spend half of his time. Michael V. Williams has transferred to purchasing, and Albert N. Garrett, assistant superintendent of the finishing department, has taken over Mr. Williams' position as assistant to the general manager.

John B. Danner and William L. Merritt have been given temporary assignments as assistant finishing superintendents.

John Sharp, supervisor of Scotties operation, is now shift manager to temporarily cover for Mr. Merritt and Mr. Danner.

William Fitzgerald, supervisor in the Soft-Weve department, will act as foreman and relief shift manager during this period of change.

Carleton J. Lanphear will be promoted from the job classification of Soft-Weve runner to Soft-Weve foreman to cover the opening left by Mr. Fitzgerald's promotion.

Harold T. Jones has been promoted from the position of head operator in the Scotties Facial Unit to supervisor of that department.

Cutting Forest Fires

LOS ANGELES—The local office of Foote, Cone & Belding, advertising agency, has prepared materials for the 1949 Forest Fire Prevention campaign. Material includes an advertising kit, a poster showing four basic ways of preventing forest fires, a series of newspaper ads of which free mats are available, and a car card for display during April.

B. C. Foresters Shuffled

VANCOUVER, B. C.—R. G. McKee has been appointed forester in charge of the B. C. Forest Service operations, forest protection division, succeeding E. W. Bassett. The shuffle took place with the appointment of Mr. Bassett as district forester, Vancouver, to succeed C. J. Haddon, who is retiring.

Gain on Balance

OTTAWA—An analysis of 40 leading Canadian industries by Dr. Wallace Goforth, research economist of Gilbert Jackson & Co., has caused him to express the belief that 22 would gain on balance from free trade with the United States, including the pulp and paper industry.

MONORAIL ASS'N EXECS.

A. F. Anjeskey (left) sales manager of the Cleveland Tramrail Division of the Cleveland Crane & Engineering Co., Wickliffe, Ohio, was elected president of the Monorail Mfrs. Ass'n., at the group's recent Chicago meeting. . . . Wilbur Mayer (right), sales manager of the Louden Mach'y. Co., Fairfield, Iowa, was elected vice-president, and E. Donald Tolles, secretary-treasurer. Offices of the Association are at 71 West 35th street, New York 1, N. Y.

ROLLAND R. WHITEMAN

—named general sales manager of the Blake, Moffitt & Towne wrapping paper division, San Francisco, in charge of sales and buying for his firm's 18 houses . . . Succeeding him at Los Angeles is Robert Armstrong.

KNIGHT IN CAPITAL

G. Webber Knight heads new Washington office of the McPherson Co., architects and engineers. Quarters are in suite 710, Carry Building, 927 Fifteenth Street, N. W.

DETROIT DIST. MGR.

Wm. F. Emery, now manager of the Detroit district office of the Bristol Co., Waterbury, Conn. He has been with Bristol since 1926.

New Parts Storage Building

ERIE, Pa.—Hammermill Paper Co. is building a warehouse on East Lake Road for storing machinery parts. The structure will be of sheet steel and will cost $19,700.

Can. Machinery Exports

OTTAWA—Exports of paper mill and pulp mill machinery from Canada totaled $3,817,024 during the 12 months of 1948, with the value of such shipments to the United States reaching $821,498 and proving to be the second biggest market for such supplies from this country, the Canadian Government reports. The U. S. figure was surpassed during this past year only by exports to Newfoundland which amounted to $1,379,746.

Exports to other countries included $764,601 to Australia, $492,685 France, $133,959 United Kingdom, $103,759 Norway, and lesser amounts to Union of South Africa, India, British Malaya, British Guiana, New Zealand, Austria, Belgium, Brazil, China, Finland, The Netherlands.

Exports of power operated saws and parts from Canada found their biggest market in the United States during the past 12 months of 1948, the official report points out, with such shipments totaling $1,129,245 out of exports to all countries in this period of $1,802,-000. In fact, the nearest figure to the U. S. in such Canadian business was New Zealand, but even such shipments amounted to only $125,790 during 1948, with no less than 50 other countries getting the balance and emphasizing the proportionally larger shipments to the U. S. market.

Can. Price Statistics

OTTAWA — The wholesale prices of newsprint and wrapping paper moved up to 133.9 in January, 1949, compared with 134.8 in December, 1948, and 129.5 in January, a year ago, on the base of 1926 - equals - 100, the Prices Branch of the Canadian Government reports. Wholesale prices of pulp dropped to 194.3 in January, 1949, as against 195.5 in December, and 195.8 in January, of last year, on the same basis.

Dutch, Polish Pact

WARSAW—Poland and the Netherlands signed a 1949 trade agreement on February 16 which involves exchanges valued at the equivalent of $22,000,000 on each side, doubling those of 1948. The Dutch will send Poland rubber, copra, tin, cattle, butter, electro-technical equipment, and chemical dyes Poland will send Holland coal, rolled goods, machines, glass, cement, paper and timber.

Siamese Controls

SINGAPORE—Though records of shipments from Canada to Siam are expected henceforth to decline decidedly in certain classes of goods since Siam has instituted a system of controls to reduce the purchasing of "luxury" goods from abroad, yet continued and improved trade between these two countries is expected in newsprint and other papers, according to Paul Sykes, Canadian Government Trade Commissioner here.

Planning Packaging Display

NEW YORK—The Leeds Sales Co., is planning a "Contract Packaging and the Buyers' Market," display for its booth No. 218, at the American Management Assn's. National Packaging Exhibition, Convention Hall, Atlantic City, N.J., May 10-13.

In addition to packaging service, Leeds will exhibit functional and decorative packaging material as well as staple and specialized packing materials.

Sectional Safety Meetings

CHICAGO—Sectional safety meetings are scheduled by the National Safety Council for the spring months as follows: March 29-April 1: Greater New York Safety Convention; April 4-5, Industrial Accident Prevention Ass'n., Toronto; April 6-9, West Virginia Statewide Safety Conference, Charleston, W. Va.; April 12-14, All-Ohio Safety Congress, Columbus; April 19-21, Pittsburgh Safety Conference; May 9-11, Central New York Safety Conference, Syracuse.

Canadian Exports Newsprint, 1948

Twelve Months Ended Dec. 31, 1948

	Quantities (Cwt.)	Values ($)
UNITED STATES	78,347,320	340,334,045
United Kingdom	1,213,799	5,319,660
Eire	170,769	843,839
British East Africa	999	6,832
South Rhodesia	11,281	52,607
Union of South Africa	735,417	3,595,056
G. Coast	218	1,172
Nigeria	2,592	19,388
S. Leone	200	1,215
B. Sudan	3,340	30,148
India	300,593	1,865,392
Pakistan	43,545	258,615
Ceylon	41,989	230,242
B. Malaya	77,125	566,236
Bermuda	8,935	47,484
B. Guiana	15,274	96,083
B. Honduras	1,507	10,273
Barbados	2,853	17,162
Jamaica	59,951	326,414
Trinidad	24,806	136,549
Bahamas	1,212	8,516
Leeward Windward	2,487	17,164
Hong Kong	120,918	840,892
Newfoundland	18	138
Australia	876,375	4,348,655
Fiji	750	4,167
New Zealand	514,690	2,507,804
Surma	1,118	6,752
Abyssinia	1,002	7,804
Argentina	382,556	2,213,444
Belgium Congo	4,721	35,034
Bolivia	26,318	147,474
Brazil	579,846	3,138,686
Chile	212,601	1,092,631
China	381,467	2,603,734
Colombia	248,970	1,401,131
Costa Rica	12,635	74,790
Cuba	359,066	1,667,381
Ecuador	62,188	317,929
Egypt	20,281	104,092
St. Pierre	16	125
Germany	1,232	4,651
Greece	128,978	705,385
Guatemala	33,416	185,300
Hayti	2,599	19,058
Honduras	769	4,741
Iraq	675	3,986
Japan	3,942	28,579
Korea	395	2,770
Mexico	488,556	2,274,632
Morocco	2,272	12,269
The Netherlands	2,799	13,459
Netherlands East Indies	5,935	43,283
Netherlands Guiana	1,134	7,369
Netherlands West Indies	2,771	16,398
Nicaragua	7,370	52,431
Panama	63,646	328,252
Iran	6,696	38,128
Peru	82,437	431,311
Portugal	11,844	75,643
Port. Africa	5,687	32,036
Salvador	37,389	206,413
San Dom.	5,207	30,602
Siam	997	7,238
Spain	7,333	36,827
Alaska	3,482	16,315
Virgin Is.	20	117
Guam	6,122	29,264
Hawaii	130,907	587,252
Phil.	90,135	671,564
Porto Rico	177,800	876,904
Uruguay	256,332	1,415,043
Venezuela	120,754	669,177
TOTAL	86,561,671	383,122,743

To Address Fine Paper Div.

NEW YORK — George Olmsted, Jr., president of the S. D. Warren Co.; John D. Zink, vice-president of the Hammermill Paper Co.; and Arch Crawford, president of the National Ass'n. of Magazine Publishers, will be the speakers at the Fine Paper Division meeting of the National Paper Trade Ass'n., at Hotel Waldorf-Astoria, April 5, A. H. Chamberlain, NPTA executive secretary, reports. At the meeting, Harry Londergan, NPTA statistician, will present the Annual Survey Report on Fine Paper Merchants Operating Results for 1948.

Byron Weston Retires Four

DALTON, Mass.—Four Byron Weston employes, one a key sales official, have retired from active association with the mill. They are G. L. Giddings, former sales manager, and more recently its west coast representative; Joseph T. Bartley, oldest Byron Weston employe in years of service, who had been with the company since 1902; Robert H. Irish, who had been with the company since 1913 and was maintenance superintendent; and John F. Killeen who was employed in the repair shop and who had been with the paper mill over 23 years.

Quality Trend Evidenced

OTTAWA — Provincial Paper Ltd. of Canada states that its uncoated papers are again back to pre-war weights and that two new grades have been added. One of these, Propaco Thintext, is light, strong, opaque, bright, and is designed for maximum content with minimum bulk. The other is York Multi-Purpose, a top - quality letterpress or offset paper designed to possess extra strength to give high foldability and long wear.

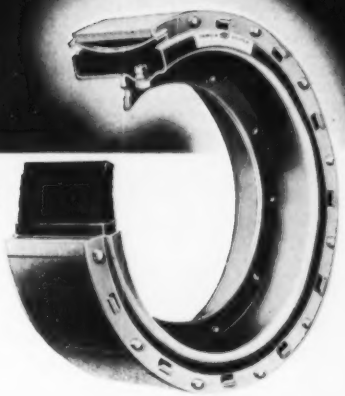
Marks 75th Birthday

ROCHESTER, N.Y.—Robert Buedingen, president of Wm. Buedingen & Sons, Inc., paper box manufacturer, was honored with a party to celebrate his 75th birthday recently. He has been active in the paper box field since 1887, when his father founded the firm. The birthday party, attended by about 60 friends and relatives, was planned by Mrs. Buedingen, who is secretary-treasurer of the firm.

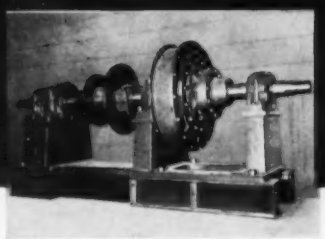
BMT Personnel Changes

BOISE, Idaho — John E. Pemberton has been named manager of the Boise division of Blake, Moffitt & Towne. He succeeds Frank M. Roner, manager for the past two years, who has been transferred to the company's Oakland division.

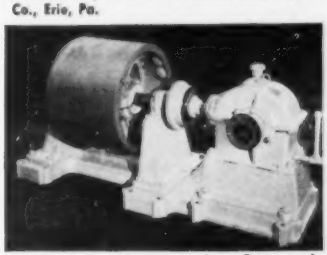
FAWICK-EQUIPPED MACHINES



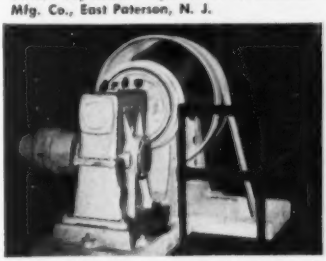
Fawick Air-Ring Clutch or Brake Type E



Fawick Airflex element used on No. 3 Paper Machine Dryer Drive at Hammermill Paper Co., Erie, Pa.



Fawick Airflex element used on Pusey and Jones Corporation Dryer Drive at Marcalus Mfg. Co., East Paterson, N. J.



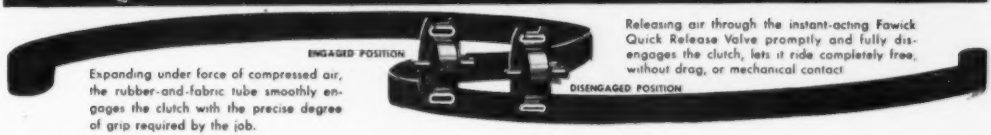
Fawick Airflex Clutch on Calendar Drive of No. 2 Paper Machine at Howard Smith Paper Co., Ltd., Cornwall, Ontario.

Time-wasting clutch adjustment down time is practically eliminated on Fawick-equipped machines. The moving parts of this Fawick Clutch—the rubber-and-fabric pneumatic tube and the friction shoe assemblies—adjust automatically and compensate for wear.

The smooth engagement action of this Fawick Clutch eliminates sudden shock loads which damage machinery. Controlled torque starting can be obtained with a simple modulating air valve. This type Fawick Clutch is ideally suited to continuous slip applications.

For specific recommendations for your machines, write to our Engineering Department today. Address Dept. PT.

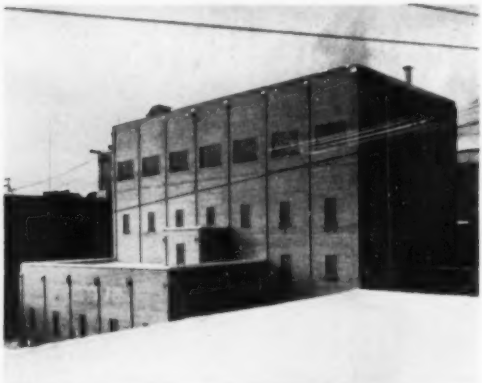
Airflex



Expanding under force of compressed air, the rubber-and-fabric tube smoothly engages the clutch with the precise degree of grip required by the job.

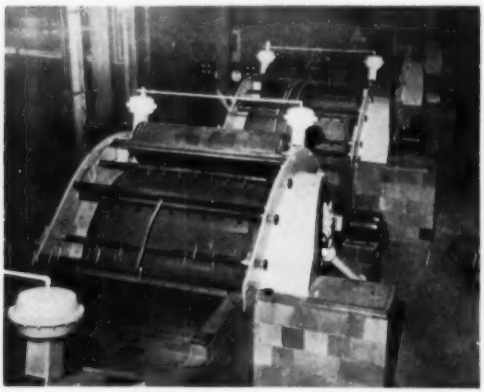
Releasing air through the instant-acting Fawick Quick Release Valve promptly and fully disengages the clutch, lets it ride completely free, without drag, or mechanical contact

MANDO'S NEW BLEACH PLANT—CAPACITY 100 TONS, DAILY



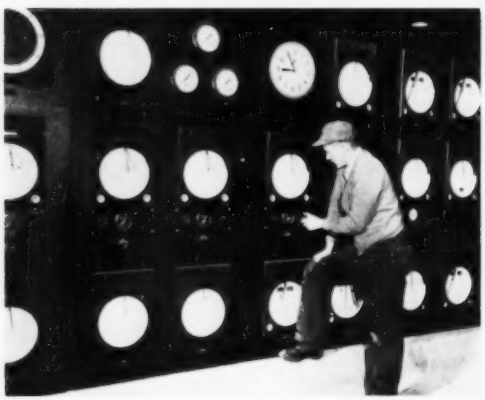
(1) Centrally located in the mill proper, the new Mando bleachery is of the most modern design, complete with latest equipment and control features.

(4) Pure water for bleaching is assured as Mando's 15,000,000 gallon water filtration plant commences operation with the opening of the bleachery.

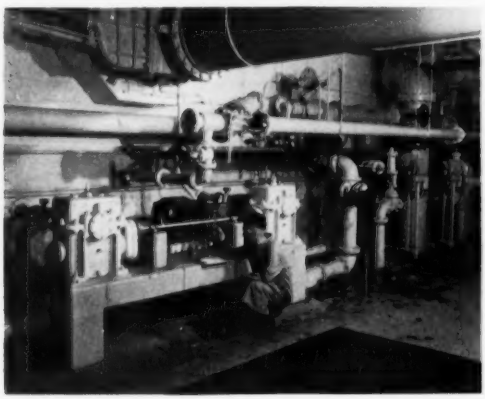


(2) Stock is washed after each bleaching stage in a series of vacuum washers located on the top floor of the main bleach plant.

(5) One of the final steps in removing impurities from the water is the passage of the water through a series of filter beds.



(3) The main instrument panel featuring centralized control undergoes a final check-up prior to the start of bleaching operations.



(6) Lab Assistant W. E. Green checks the water at one of the control points set up in the filtration plant. The water is tested at various stages of the filtering process.

1070
tons per day
ULTIMATE
TOTAL
CAPACITY

REPEATS
REPEATS
REPEATS
REPEATS

. . . with B&W RECOVERY UNITS

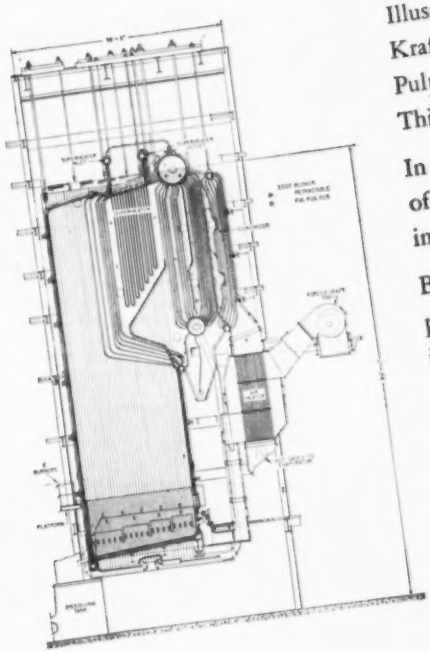


Illustration shows a 250-ton B&W Kraft Recovery Unit, purchased by West Virginia Pulp & Paper Company in December, 1947. This unit is now in process of erection.

In October, 1948, two similar units, each of 250 tons capacity, were ordered, and are now in the B&W shops.

Back in December, 1936, this customer purchased a 120-ton unit, which is still in operation. And four years later, a 200-ton unit was purchased. West Virginia Pulp & Paper has thus, during 12 years, purchased B&W Recovery Units totalling 1070 tons capacity per day.

P-35

THE BABCOCK & WILCOX CO.
General Offices: 85 Liberty St., New York 6, N. Y. Works: Alliance and Barberton, O.; Augusta, Ga.
FOR PAPER MILLS—B&W Recovery Units . . . B&W, Integral Furnace, Stirling, Type H Stirling and Cross-Drum Boilers . . . Boiler Components . . . Pulverizers . . . Fuel Burning Equipment . . . Refractories . . . Process Equipment . . . Alloy Castings . . . Seamless & Welded Tubes for All Pressure and Mechanical Applications.

BABCOCK & WILCOX

March Pulp, Paper and Board Industry Report

By W. LEROY NEUBRECH

Chief, Pulp and Paper Section, Forest Products Div., Office of Domestic Commerce

Economic Review

Sounder conditions in the paper and board trade appear to be emerging following several months of adjustment in the supply-demand relationship and a return to prewar business competition. After practically a decade of abnormal conditions it almost has been a shock to many in the industry to face a market with the buyer in command. This apparently has been the cause of some uncertainty in the past several weeks for it has been a good many years since competition has caused the closing or temporary shut-down of any plant or a lower price has seemed possible.

Although the facts may be hard to face, never before in history has the trade had better facts available upon which to analyze the situation. In the pulp, paper and board field, as well as in many other industries, reliable data and information for many months have been pointing to the balancing of supply with demand and it was no news that the turning point had been reached. Facts disclosed a leveling in several consumer nondurable industries early in 1948, one of the first indicators that consumption of paper and board would soon feel a slackening from the steady upward cycle underway since 1945. Statistics also pointed to a larger percentage of the consumers' dollar going into durables where proportionately less paper is used than in nondurables.

With larger supplies of paper available, indexes of wholesale paper merchants' inventories showed a sharply rising trend which started late in 1946 and reached a peak in May 1948. From then on wholesale merchants began to reduce inventories and to move out of stock the inferior war grades. As a result, official statistics show wholesale paper stocks as of the end of December at the lowest point in several months. Reports from Commerce Department Field Offices state that most below quality items now have been sold and in general inventories are well-balanced as to grades and items and definitely on the low side relative to sales when compared to prewar stock-sales ratios. However, because of the lull in January demand coupled with normal seasonal factors, sales in January dropped 12 index points and had the indirect effect of pushing up inventories 12 points.

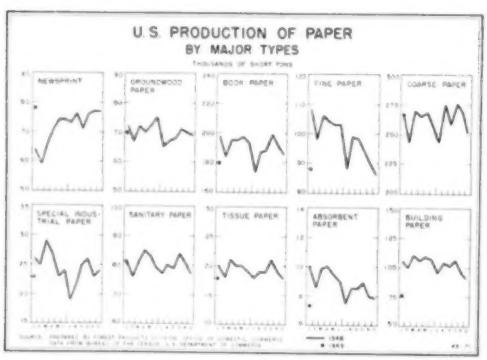
It would be helpful if reliable month-to-month data were available on paper and board inventories in the hands of the principal groups of converters, miscellaneous publishers and commercial printers. Without such figures reliance has to be placed in most instances upon trade comment for these segments of the industry. Commerce Department Field Offices report that trade contacts in those fields believe that stocks are sharply reduced from a year ago and in fact many such firms are now operating on a hand to mouth basis.

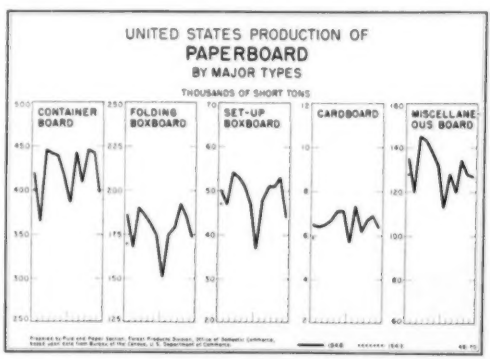
For primary paper and board manufacturers, trade association figures point to a modest increase of paper stocks in the warehouses of mills. In terms of tons, mill stocks are small in comparison to the volume of stocks usually held by distributors and consumers. Mill stocks accumulated gradually during 1948 as orders were cancelled and demand fell off.

In retrospect, it is apparent that an unknown but significant part of production in 1946 through mid-1948 went into pipe-line inventories and not into actual consumption. This gave added impetus to the pressure of demand in that period. As 1948 drew to a close, the reverse situation began to develop. Many consumers stopped buying as soon as they could see a ready supply available on short notice and began to use up inventories. At the same time, actual consumption probably declined in some fields. This combination of factors seems to be reaching a climax in the first quarter of 1949 which caused unwarranted pessimism prevailing in many sectors of the trade.

In a period of downward adjustment the segments of an industry nearest the point of actual consumption are usually the first to feel the change. With paper this generally means the wholesale distributor. He had fought hard to place orders and build up stocks to meet customer needs; now he finds the customer demanding better quality, better service and better prices. Because there are many more distributors than mills, some being relatively small firms and some newly created enterprises which have never faced a competitive market, there has been a tendency to strive for volume even at the expense of sound business practices and profits. Such practices on the part of a small percentage of firms may tend to establish a pattern for all and what otherwise would have been a realistic adjustment in volume and price becomes an avalanche. As a consequence much depends upon the intelligent long-range vision and stabilizing influence of the wholesale paper merchant executive in setting the policies of his buyers and salesmen.

It is not long, of course, before the back-lash of leveling consumption and buyer resistance is felt by the primary manufacturer. It is hard, also, for the mills to realistically face facts. A number of high cost, comparatively obsolete mills were brought into production in the early stage of the war or soon afterwards. As a result of recent greatly increased, new and more efficient capacity, several of the marginal mills have been shut down in the past several months. The industry,





as a whole, could not expect to maintain operations at full capacity indefinitely, let alone each individual mill. There are always occasions when business changes take place when a machine or two in some mills is shut down for a period. Nor could industry or business expect to maintain the large earnings of the past 3 years and be able to plow as much back into the business year in and year out. Mill executives also have learned a lot in terms of business management in the past decade. The current period will be another hurdle to be jumped but with more experienced smoothness.

Evidence of the return to strong competitive conditions is apparent from January Census data. Production of paper and board was down 116,000 tons below January 1948 while wood pulp consumption was up about 10,000 tons and waste paper consumption down about 175,000 tons, thereby disclosing output of higher quality paper and board than a year ago.

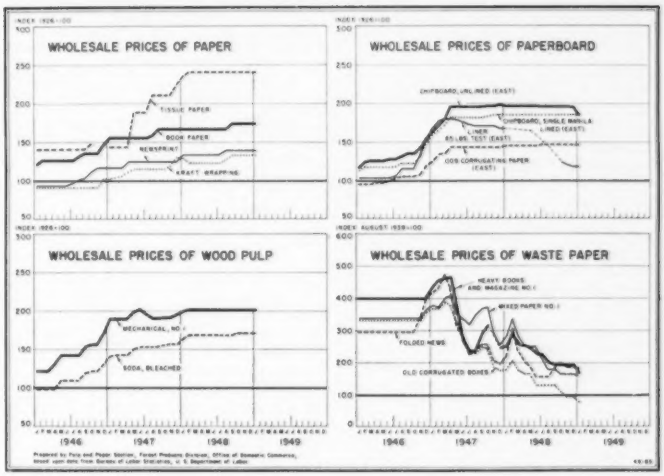
Buyers' pressure for adjusted prices was first apparent at the wholesale level and now faces the mills. A number of grades of paperboard have shown a noticeable price decline in the past few months but for the majority of paper grades prices have held fairly firm. The price indexes of the Bureau of Labor Statistics show that paperboard prices have advanced to much higher levels than most paper items from 1939 to date. (See *Pulp and Paper Industry Report* for January 1949 — page 3).

The competitive reaction of prices has been particularly noticeable in quotations on wood pulp, especially that originating in northern Europe. Also, paper and board output of some United States' integrated companies being below pulp mill capacity has resulted in more and more pulp offered for sale at very attractive spot market prices up to $10 to $20 per ton under domestic and Canadian contract prices.

Pulpwood prices are also reported suffering from abundant supplies and leveled consumption. No sharp breaks are expected in wood prices, however, since most mills realize the importance of maintaining long range supplies in competition with other forest products industries, but declines of $1 to $2 per cord delivered at mills for the ensuing season are forecast by some operators.

Pulpwood prices have increased greatly from prewar as evidenced from the following table. Prices in 1948 were probably even higher than in 1947.

Pulpwood prices vary considerably between regions and species. In 1947 spruce and balsam fir were the highest and averaged $25.77 per cord while southern pine at $14.44 a cord was the lowest. In part at least, transportation distances and logging conditions account for the spread in costs. In the United States, of the total domestic pulpwood consumed east of the Rocky Mountains, amounting to 16,834,000 cords in 1948, less than 2 percent originated from the National Forests, while



more than 98 percent came from private forest lands.

Stumpage sales from National Forests are on a competitive bid basis. Strict regulations govern cutting and forestry practices on all National Forests. Private land stumpage offered for sale is subject to competition from various classes of forest products industries, including pulp and paper mills. Forest lands owned by pulp and paper companies are placed upon a forest management basis, with most companies employing several trained foresters. These private foresters not only give attention to their own company lands but encourage, in cooperation with Federal and State foresters, improved forestry practices on other private forest lands when timber purchases are made.

Pulpwood

Mill supplies of pulpwood range from ample to superabundant in all sections of the United States, according to recent field reports of the Department of Commerce. In the northeastern area, pulp producers in general find themselves well supplied with wood despite the interruption to pulpwood movement caused by a lack of snow. In the South, with some mills operating on part time, pulpwood has more than met demand favored by a relatively dry season.

A condition of plenty also prevails in the wood piles of the industry in the territory adjacent to the Great Lakes, with most mills endeavoring to reduce their stocks by inventory withdrawals. Reports indicate that the current rate of mill consumption in that region will not justify extensive purchasing of pulpwood for the next month or so. Some mills of the area, in fact, have as much as a year's supply of wood on hand.

Pulpwood
Average Cost Per Standard Cord F.O.B. United States Pulp Mills

1947	$17.83
1939	7.82
1938	8.10
1937	7.97

Source: Bureau of the Census.

Pulpwood cutting in the region of the Lakes, due to the retarding influence of large supplies at the mills and in the woods, has slowed down generally and is virtually at a standstill in some sections. Mill crews, however, have proceeded with their winter harvest but even these sources are providing more pulpwood than is needed for current requirements and a realistic level of inventories. Many mills exhibit little interest in buying wood beyond present contracts expiring in April and May, as they find no current purpose in stockpiling. As a result, private contractors find that the open market demand for pulpwood is extremely limited. In consequence, private cutters have been obliged either to accumulate stock-piles themselves or to discontinue their activities entirely. Pulpwood operations in the Lake States, as the result of the foregoing conditions, are expected to come practically to a halt in the early spring with the likelihood of activity being resumed later in the year when lower prices may prevail.

Pulpwood supplies in the Columbia and Willamette river areas are reported to be quite adequate to sustain pulp production at required levels, although log inventories at mills on February 1, amounting to 159.8 million board feet log scale, showed a reduction of nearly 30 million board feet as compared with January 1. Of the February 1 holdings, 115.2 million feet were hemlock; 19.4 million feet, fir; and 15.8 million feet, spruce. Both hemlock and spruce declined during January. The loss in inventory holdings reflected the poor weather conditions prevailing in this

region since the start of the present year, highlighted by an unprecedented freeze-up west of the Cascades and heavy snows in the foothills of both the Coast and Cascade mountain ranges. Logging operations in much of the area, as a result, have approximated a complete stoppage since late in December. The situation is not expected to show substantial improvement until at least April, due chiefly to the poor condition of the roads. Most of the country roads, as well as some State highways, have been closed to logging trucks on account of soft roadbeds, slides, and local floods. The impassability of most of these roads is attributed to a rapid spring breakup in the general area.

Woods labor throughout the United States, as a result principally of the over-all slackening in logging activities, is becoming generally more plentiful, with conditions of surplus arising in certain areas, particularly the western portion of the Great Lakes region. The greater availability of labor has had the usual effect of increasing the productivity per man-day. In the field of the relations between the workers and management, conditions are reported to be uniformly harmonious. Wage negotiations were underway in March between unions representing workers in logging operations and several pulp and paper mills in the Pacific Northwest. Upward adjustment of wages together with the establishment of welfare programs is being asked by the union.

Some reduction in pulpwood prices during recent weeks has reflected the general modification of demand. In the Northeast area, prices are reported by some operators as softening despite weather hindrances to pulpwood movements. In the South, too, price declines are indicated, ranging to a drop of 10 percent in the northern Florida section. The Lake States region reports a moderate reduction of bidding price (off 50c per cord in January) and an expectation of more sizable price cuts with the consummation of present contracts.

Wood Pulp

An announcement which would have been enthusiastically welcomed by the domestic pulp purchasing industry less than a year ago has been received with generally marked restraint. This was the recent trade advice outlining drastic reductions in Swedish wood pulp prices for 2nd-quarter 1949 delivery. The report of these substantial price cuts on the part of our largest overseas supplier, though somewhat tardy to have any important near-term effect on pulp shipments to this country from Sweden, is none the less a noteworthy highlight of the current pulp picture.

The new Swedish wood pulp prices are quoted f.o.b. Atlantic dock, with inland freight allowed up to $7.50 per ton. This would provide for delivery to most mills in the Eastern and Northeastern part of the United States. For a ready comparison, the new Swedish prices on dock per short ton at an American Atlantic port are set forth in the following table alongside current domestic quotations. Domestic and Canadian prices are f.o.b. mill with freight included up to certain amounts.

Wood Pulp

Grade	Domestic	Swedish	Decrease as against previous Swedish prices
Bleached sulphite	$125/145	$132.50/	$32.50
Unbleached sulphite	118/ —	122.50/124.50	17.50/18.50
Bleached kraft	136/145	137.50/140	12.50/25.00
Unbleached kraft	105/125	112.50/117	10.50/15.00

Although the decreased Swedish prices are still moderately above domestic and Canadian figures for comparable grades, some concern has been expressed by domestic producing mills having pulp for sale at the potentialities of the more competitive price levels on overseas pulp. There is, however, no indication of any tightening in domestic supplies that would tend to promote substantially increased pulp imports from northern Europe during the near future, unless quality, price or other incentives are offered.

A general easement in supply, in fact, has characterized the recent situation in respect to virtually all grades of market wood pulp. The over-all demand for pulp has tapered off during the last few weeks due, in great measure, to some reduction of operating schedules by nonintegrated mills, according to field observers of the Commerce Department. Contributing also to the general availability of pulp is the reported increase in pulp production during January, in comparison with December 1948. This continuation of the over-all upward trend in output may have been neutralized during February, inasmuch as recent field reports point to a curtailment of production in the unbleached categories.

Cut-backs of from 6½ percent to 7 percent are noted particularly in the case of unbleached sulphate, prompted by a reported surplus of that grade; a corresponding weakness has appeared in some mill ex-contract prices. Unbleached sulphite, to a somewhat less extent, is indicated to be in more than adequate supply and its output is being diminished accordingly. Production of the bleached grades, on the other hand, is reported to be approximately in equilibrium with demand, and production is understood to be running full time.

In a special report from the Great Lakes region, reductions of mill production schedules inaugurated in January continued, for the most part, through February. At least some mills of the area, in fact, remained closed throughout the latter month. A resumption of activities, however, is expected to take place during the latter part of March. A partial interruption to pulp (and paper) manufacture in the Willamette River district of the Pacific Northwest occurred in February when two integrated mills were temporarily closed down due to a lack of a full head of water reducing power at both plants. Apart from the high water — now fairly well subsided — causing the few days' stoppage on the Willamette, no other interruptions to pulp production resulted from abnormal stream conditions, and attendant power shortages, have been recently reported. In Wisconsin, where drought conditions impeded pulp output during the latter months of 1948, stream flow generally has improved and all power restrictions have been lifted. In Maine, too, conditions of water supply, and of power production, are reported to be quite favorable.

From Canada come reports of some recent lessening in the productive output of pulp. Contract prices are being generally maintained, with no indication that any downward adjustments are being contemplated at least before the third quarter.

The renewal of competitive conditions in the paper and pulp industries has stimulated efforts looking toward the improvement of quality. A manifestation of these efforts, in the field of wood pulp, is a new process reportedly developed in Canada in which the fibers are curled. This technique is said to have the effect not only of widening the range of quality obtainable from pulp but also to increase the yield as much as 10 percent. While announced results apply to the sulphite process, similar achievements are reported to have been obtained in producing kraft, soda and groundwood pulps by the new method.

The attitude of officials in the pulp industry, despite the apparent modification of demand and the consequential softening of prices in certain grades, is one of quite confidence from which the element of discouragement is conspicuously absent. The convergent trend of opinion seems to be that consumption of all pulp grades, with the possible exception of unbleached sulphate, is still greater than the demand would seem to indicate, because of continued inventory withdrawals.

Waste Paper

The bulky grades of waste paper continue generally in oversupply, according to a survey in early March by Commerce Department field observers. Old corrugated containers, alone of the lower grades, lately have experienced a mill demand that, while not urgent, has been sufficient to remove this category from the doldrums in which news and mixed have been becalmed for some weeks. Otherwise, the market has been featured by a relatively good demand in most regions for the high grades, accompanied by a firm undertone of price.

Reports from the New York market, while stressing the excessive supplies of waste, state that dealers, in order to obtain desired grades, have been obliged to accumulate more mixed paper than the market can absorb. Weakness is reported in folded news and in books and magazines, with prices soft in both grades. The high grades, on the contrary, have shown price firmness as the result chiefly of curtailed production on the part of some of those mills of which these categories of waste paper are a byproduct.

In the New England area, no change is indicated in the condition of general oversupply, which has been augmented by the unusually open winter. Warehouses are described as bulging. Some mills, in search of old corrugated, have been unable to obtain desired supplies at the offered price of around $23/$25 for the reason that peddlers are finding it unprofitable to pick up old containers at those figures. Most peddlers, in fact, have reportedly discontinued their paper collections. Mills have also experienced difficulty in securing the high grades and have been obliged to raise their bids. These pulp substitute grades, in fact, have been none too plentiful in the New England region. Across the board, quality is indicated to be an essential factor in that market.

In the Middle West and Lake States regions, a surplus also prevails with some rather precipitous price drops having taken place recently. Mixed papers have dropped $3 per ton under the January levels, while folded news has recently experienced a $1 to $2 cut. Old corrugated, on the other hand, maintains a fairly firm price as the result of a steady, though quiet, market. The general lack of demand for waste paper in this area is attributed to the closing, for 6 to 7 weeks, of a number of large consuming mills. Producers of building papers in the area report a seasonal lull in the demand for their products. As these mills are large consumers of mixed papers, this slackening in the localized requirements for building and roofing paper has helped to accentuate waste paper accumulation.

In the region of the Gulf States, the demand for the lower grades of waste paper is reported as a little more than one-third its volume 2 months ago. Smaller waste paper packers, in the area, in fact, are seriously contemplating a virtually complete discontinuance of their waste collections until such time as conditions show a definite improvement. The market for high grades in this part of the country has reached a state of extreme dullness.

While waste paper generally will unquestionably continue as a raw material of prime importance, members of the trade engaged in its salvage as well as those in the consuming industries would be less than realistic if they failed to take cognizance of current fundamental trends. Improvement in the quality of papers and boards is, of course, stressing wood pulp requirement in preference to that of waste paper. This is particularly true since lower wood pulp prices have made it feasible for manufacturers to indulge this preference. Especially in the production of container boards (consumers of nearly 30 percent of all waste paper used), those grades now utilizing a preponderance of wood pulp are supplanting the output of the marginal mills which formerly consumed large volumes of waste. Despite these definite influences toward a temporary lessening in waste demand, dealers and packers can undoubtedly counter the over-all threat to their welfare by taking steps to improve decisively the quality standards of their products and their packs. By so doing, the waste paper industry should enhance its ability to maintain a competitive position with wood pulp. Consumption of the higher, or pulp substitute, grades of waste has reportedly registered a considerable increase during the first 2 months of the present year.

Paper and Board

Year	Manufacturers' Production[1] (1,000 short tons)	Manufacturers' Inventories[2] (1,000 short tons)	Wholesale Distributors' Sales[1] (Millions of dollars)	Wholesale Distributors' Inventories[1] (Millions of dollars)
1948				
Jan.	1,864	223	133	142
Feb.	1,701	225	123	145
May	1,908	244	119	166
Dec.	1,753	288	121	150
1949				
Jan.	1,748	298	115	159

[1] Bureau of Census data.
[2] Inventories of paper and board mills reporting to the American Paper & Pulp Assn.

MANUFACTURES

Paper and Board

Supplies of papers and boards can now be considered generally adequate to meet market requirements. This includes kraft products, where production has finally caught up with the current demand. The newsprint market is tight in spots but a more even balance between demand and supply is evidenced by the decline in spot market prices to a level not greatly above the contract price for similar types of newsprint paper. The supply of other classes of paper in recent months has run ahead of current demand and mills in an increasing number of instances have found it advisable to curtail operations. In many cases this has merely meant return to a normal 5 or 6 day work week. Other mills, notably in the fine paper field, have found it necessary to cut operations to a 3 or 4 day work week.

Paper and board production during the month of January dropped about 116,000 tons below January 1948 but was about on a level with December 1948. Production at the mills has been adjusted to meet market requirements. Competitive conditions for the nonintegrated mills have eased in that there are now ample supplies of market wood pulp at lower prices. Foreign wood pulp can now be had at close to the domestic price level.

Buyers are still placing orders cautiously according to reports received from the Field Offices of the Department of Commerce. New orders placed with the mills are reported not to be up to the level of a year ago. Merchants and wholesalers are reported to be still trying to dispose of remaining inferior grades of papers purchased when the market was tight. Jobbers are reported to be holding back their orders in anticipation of lower prices. Such orders as they place with the mills are for current business, and it is doubtful if there will be any appreciable purchasing for stocks until a definite price trend is established.

All segments of the paper distributing and consuming industries apparently are endeavoring to keep their inventories at the lowest working level. Wholesalers and jobbers are reported to be buying on a hand-to-mouth basis for immediate delivery. Printers are buying only for current needs.

Reports from the midwest indicate that sales at the consumer level on the other hand are holding up well for this season of the year. They are below the December volume, but it is pointed out that the number of inquiries, which is a forerunner of future sales, is increasing in all lines. Another Field Office, however, reports that large manufacturing concerns, department stores, and processors in its district this year are not laying in supplies ahead of their normal rush season. Also that while newspaper advertising is up, job printers report their advertising business slower.

Reports from the north and midwest sections of the country indicate a fluidity in prices for most papers excepting standard mill grades, especially at the jobbing and merchandising levels. Mill prices for standard grades are reported to have held generally firm, although at this level price concessions are reported to have been made on tonnage orders. Such price cutting as is reported seems to be largely confined to inferior stock which merchants and jobbers have been unable to move. However, some price incentives to obtain orders is reported at the merchant level and to a lesser extent by the mills.

One potentially disturbing element in the supply and price picture is the so-called "captive" mills purchased by publishers during the war and immediately after the cessation of hostilities when the supply of printing papers was totally inadequate to meet the demand. These mills were mostly marginal high-cost mills and have now become problem children, for their publisher-owners can obtain sufficient amounts of better quality papers at a cost less than they

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Quebec Mill Question

QUEBEC—With the passing of Bill 55 at the recent session of the Legislature of the Province of Quebec, there is considerable interest in the possible happenings to the estate of the Quebec Pulp & Paper Corp., in bankruptcy since 1942. The bill empowers the Provincial Government to purchase the assets of the company for $1.5 millions. It already holds the firm's common stock but 70,000 preferred shares are in the hands of the public. Total assets would reach approximately $2.2 millions when the $1.5 millions is paid by the Quebec Government to the trustees of the estate, combined with the current assets of about $700,000.

The question now is whether the Government will dispose of the property or press its claims of $2.5 millions owing the Quebec Streams Commission. The bill extends the Government's powers to deal with the corporation to December 1, 1951.

Masonite's Holland to Natal

CHICAGO—Eugene Holland, president of the Masonite Corp., left on March 23 on the first stage of a rail-air trip to South Africa for the formal opening on April 2 of a hardboard factory recently completed by Masonite Africa, Ltd., at Estcourt, Natal. He is accompanied by Mrs. Holland, and they will fly in both directions between New York and Johannesburg.

The African company is the third foreign affiliate to be established by Masonite. The others are in Canada and Australia.

Addresses Supervisors

ERIE, Pa.—"Hammermill Paper Co. is blessed with the best-known name in the fine paper industry," President Norman Wilson said in an address March 13 before 200 supervisory members of the Hammermill organization in the Fireside Room of the Summit Hotel.

John D. Zink, vice-president and director of merchandising, addressed the group on the relationship of general business to the fine paper industry and Hammermill's place in that picture.

A. J. Shaner, industrial relations director, also addressed the group concerning the recent developments in Hammermill labor relations which culminated in the signing of a new two-year labor agreement with the union on February 14.

New Rockingham Firm

ROCKINGHAM, N. C. — Rockingham Paper Products Co., Inc., has taken over one of the buildings formerly occupied by the Sonoco Products Co. in the Midway section of Rockingham and has begun manufacture of a large line of paper products. Incorporators of the new concern are J. W. Egerton, of Darien, Conn.; and J. M. McAndrews and J. A. McIntyre, of Rockingham.

Products to be turned out immediately are waxed bags, several types of paper bags, cutter box household wax paper, removable waxed paper bags for garbage pails, and other items.

The sales office of this firm is located in Greensboro, from which point salesmen are covering several southeastern states. An office is also being opened in New York City, it was stated.

Bagasse Newsprint

NEW YORK — Two new projects to produce newsprint from bagasse (sugar cane refuse) are reported from Mexico. Neguib Simon expects shortly to have a plant operating near the sugar center at Zacatepec and Bernard Bolnie, an American who operates a paper factory at Orizaba, is planning a bagasse plant at Tlacotaplan — a $2,000,000 investment.

Plant Upping Output

OTTAWA — The new Gatineau plant near Ottawa of Commercial Alcohols, Ltd., designed for capacity production of 2,500,000 gallons of alcohol annually from waste liquor pulp from the Canadian International Paper Mill, is currently operating at approximately 80 percent capacity and is expected to be producing at an annual rate of 2,125,000 gallons by about April 1.

The plant is reported to be meeting with the management's fullest expectations both as regards quality of alcohol and costs, though construction costs will exceed original estimates but will not be beyond what has been the general experience.

Nine Visit McGraw Plant

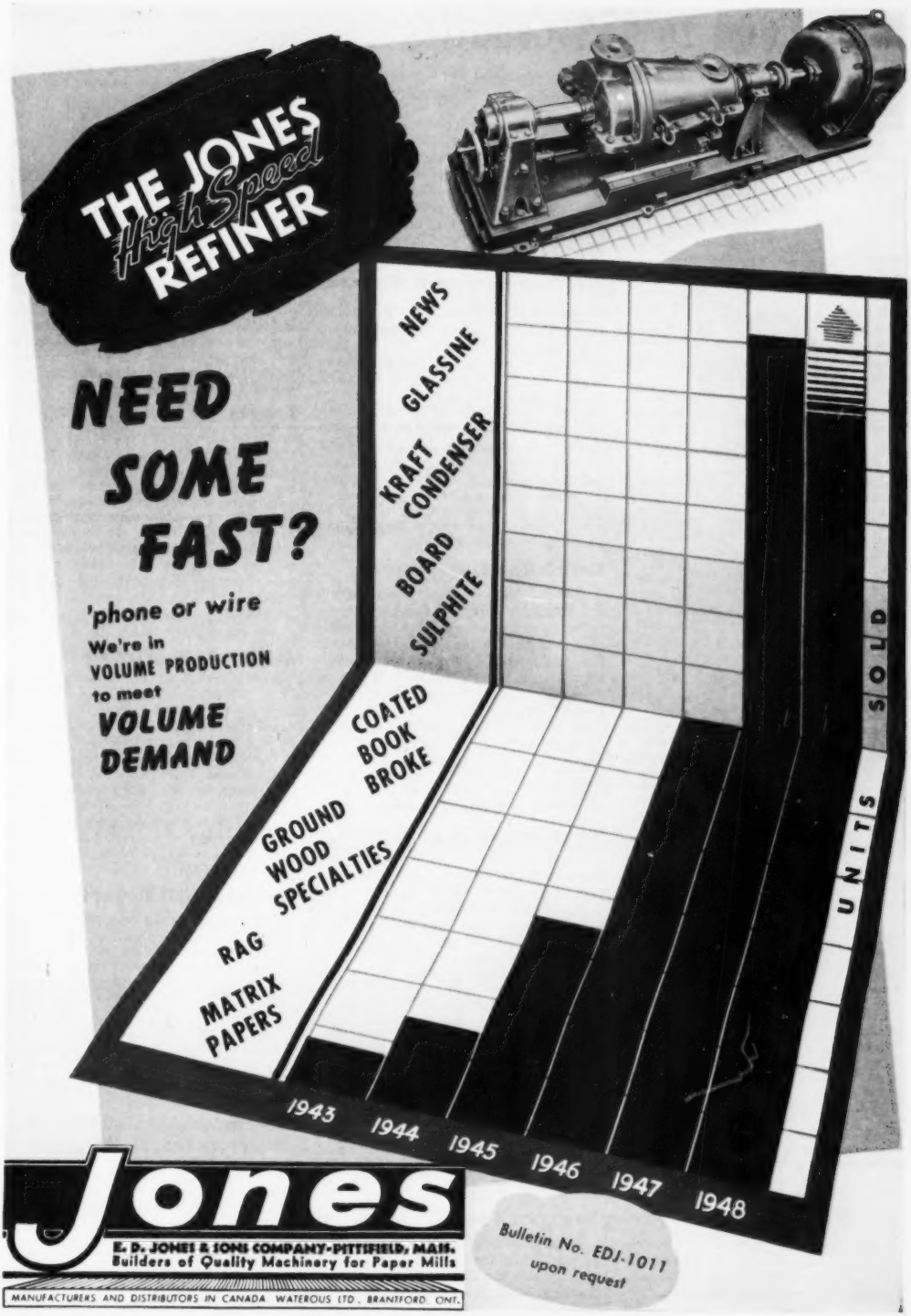
MCGRAW, N.Y.—Nine officials of the sales promotion department of Empire Crafts Co., Newark, N.Y., made an all-day tour of the McGraw Box Co. plant on March 18. Operations were explained by H. J. Ousby, general manager, and Wilson Harrison, of the clerical department. Empire Crafts distributes McGraw products.

Heron Seattle Speaker

SEATTLE — Alexander Heron, vice-president of the Crown-Zellerbach Corp., San Francisco, spoke on March 11 on "Can Management Create Jobs?" at an assembly at Seattle University at the University's Commerce Club and also at a luncheon of the Seattle Chamber of Commerce.

Box Firm Incorporated

BOSTON—The Blyn Box & Lumber Co., Inc., Berkley (Mill Pond, Myricks, Mass.) has been incorporated to manufacture, buy, sell, etc., wooden cardboard, paper, metal boxes, etc. Capital stock, 1,000 npv common shares. Philip Blyn is president-treasurer; Jessie B. Lun, clerk.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$6,000,000 to 652 Counties

WASHINGTON—U.S. Treasury checks amounting in the aggregate to approximately $6,000,000, or about 25 percent of the total cash receipts from the operation of the National Forests during fiscal year 1948, which ended last June 30, will be issued to 40 states, Alaska, and Puerto Rico for distribution to the 652 counties in which these public forests are located, the Forest Service in the U. S. Department of Agriculture has announced. The amount paid to the states this year is the largest ever returned to the counties for any year.

The accompanying table shows the states and territories sharing in the distribution of National Forest receipts, the amounts due each one, and the number of counties benefiting:

State or Territory	Number of Counties Sharing	Amounts Received from National Forests 1948
Ala.	15	$66,175.44
Alaska	..	11,062.61
Ariz.	13	228,687.21
Ark.	25	277,960.09
Calif.	38	560,923.92
Colo.	42	215,118.52
Fla.	9	60,451.86
Ga.	20	63,193.90
Ida.	34	327,783.08
Ill.	9	12,482.36
Ind.	8	1,172.01
Iowa	4	463.97
Ky.	16	29,565.10
La.	5	27,819.66
Maine	2	7,184.15
Mich.	26	92,528.33
Minn.	7	27,235.69
Miss.	30	201,832.39
Mo.	28	13,961.58
Mont.	35	207,059.72
Neb.	3	• 10,453.06
Nev.	14	34,297.86
N. H.	3	24,569.47
N. M.	20	112,436.43
N. C.	25	60,697.37
N. D.	1	30.59
Ohio	11	2,585.11
Okla.	1	25,529.28
Oreg.	31	1,696,306.95*
Pa.	4	20,895.72
P. R.	..	4,007.07
S. C.	14	87,739.61
S. D.	6	70,758.25
Tenn.	10	20,306.39
Tex.	11	103,403.18
Utah	29	102,296.68
Vt.	6	29,845.47
Va.	30	40,960.23
Wash.	27	834,719.78
W. Va.	11	25,466.96
Wisc.	11	52,998.73
Wyo.	18	117,074.09
TOTALS	652	$6,010,039.87

* The exact figure for Oregon has not been determined, but it is expected that the amount will be some less than this. See contents of release.

Can. Printers' Paper Usage

OTTAWA — The Canadian Government has just released the annual report for the printing trades of Canada and this final statement shows the following materials were used in these trades in 1946, with figures for the preceding year in brackets: Newsprint, paper, $16,873,881 ($12,567,238); Paper, bond and writing, $9,600,129 ($15,188,619); Board, paper, $3,372,351 ($2,756,356); Paper, cover and fancy, $851,417 ($783,319); Paper blueprint photostat and other sensitized, $353,545 ($193,818); Paper, all other, $3,817,530 ($3,890,149); Envelopes, $1,555,280 ($1,337,715).

Tipka to Newsprint Bureau

NEW YORK — Vernon L. Tipka has accepted the position of engineer in the Newsprint Service Bureau, succeeding the late W. G. MacNaughton. Mr. Tipka, who has had some 15 years' experience in the paper industry in both technical and managerial capacities, has lately been sales engineer with the Bird Machine Co. During the war he was assigned to package research and development and later to the procurement of fine papers in the Office of the Quartermaster General. Later he was paper consultant to the Civilian Production Administration.

Entitled to Investigation

BOSTON, Mass. — Paper manufacturers in the Berkshire Hills area are entitled to an investigation of the sanitary conditions of the Housatonic River, Arthur D. Weston, chief engineer of the Massachusetts Division of Sanitation and Public Health, told the Senate Public Health Committee on March 8. The proposed investigation is on petition of Senator Michael H. Condron (D-Pittsfield). It would include a study of the sewage and industrial waste disposal of the towns of Dalton, Hinsdale and Lenox.

Conn. Supt's Meet Mar. 25

SPRINGFIELD, Mass.—The next meeting of the Connecticut Valley Division of the American Pulp & Paper Mill Superintendents Ass'n., Inc., will be held the evening of March 25 at Hotel Sheraton. The meeting program includes an informal dinner at 6 p.m. as well as presentation of a paper and "discussion on a subject of interest to all papermakers," an association spokesman stated.

P&TA Applications

CINCINNATI—Applications for membership in the Paper & Twine Ass'n., are reported by John L. Richey, secretary-treasurer, as follows: G. A. Kuhn, Addison Associates, Inc., Newton Mass.; R. T. Griffin of the same firm, Ft. Wayne, Ind., and Aleck Fried of the Negley Bag & Paper Co., Chicago.

Austrian Paper Production

BOSTON—Austrian paper mills produced 450,000 tons of paper in 1948, almost double the 1947 output, a *Reuters* story in the March 5 issue of *Christian Science Monitor* states. Discussing the over all Austrian economic situation the article gives credit to the Marshall Plan for that country's progress. "Peak (paper) production before the war was 565,000 tons, a figure expected to be reached this year provided the coal supply continues to be satisfactory" the article adds.

New Employment Rate

WASHINGTON — New employment in the paper and allied products industries slowed down in December, the Bureau of Labor Statistics reports. The rate dropped to 1.4 per 100 workers, from 2.5 per 100 in November, while lay-offs rose a point to .8 per 100 workers from .7 in November. In the paper and pulp industries, new employment in December was at a rate of 1.2 per 100 workers, compared with 1.9 in November, while for paper boxes, it dropped to 2 per 100, from 4.2 in November.

Logging at Peak

OTTAWA — Racing against time and the softening of the ice, lumberjacks in the nearby Gatineau River district are working furiously to move the logs out during the remainder of the winter and onto the river for the coming of the Spring thaw. It is estimated that by mid-April approximately 60 million cubic feet of timber will be poised on the Gatineau ready for the Spring break-up. Meanwhile, the big dump-piles stretching for 200 miles along the river increase daily.

Italian Newsprint Up

ROME — Production of newsprint in Italy, which was very low in 1947 due to a shortage of woodpulp, has shown a marked increase in 1948, A. P. Bissonnet, assistant commercial secretary here for Canada, has reported to his government. Italy imported the following quantities of woodpulp during the first nine months of the year, Mr. Bissonnet states: from Sweden, 163,386 quintals; from Austria, 87,580 quintals; United States, 80,110 quintals; Czechoslovakia, 37,451 quintals.

Seventh ERP Report

OTTAWA—The seventh report of the Public Advisory Board, which covers ERP activities up to and including December 31, gives on "reported shipments" under ECA., i.e., goods which have actually been despatched, pulp and paper at $33.3 millions under total authorizations, with $24.4 millions reported shipped or 73 percent, according to Foreign Trade, Department of Trade and Commerce, Canadian Government.

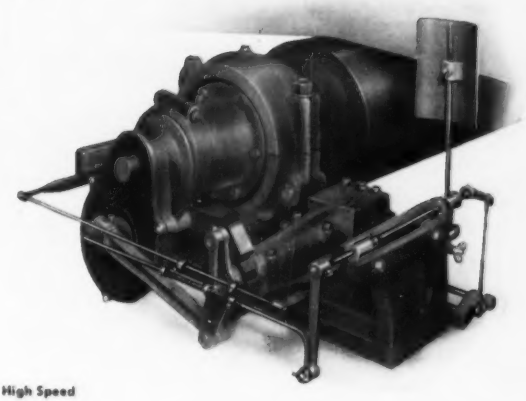
Argentine Acquisitions

BUENOS AIRES—The number of foreign industrial concerns which have been established in Argentina since the war, complete with machinery and personnel, amounts to 107 and employs 25,007 technicians and workmen, with three of these being "immigrant" paper plants with 1,010 personnel, states R. E. Gravel, local assistant commercial secretary for Canada.

MOORE & WHITE Wire and Felt Guides are fully automatic —adjustable to variations in the width of the wire and felt. The single fender arrangement assures lighter contact with the wire or felt, thus less wear, longer life, and the resulting economies in material costs and time.

These Guides are adjustable to suit the speed of any machine and any size of journal. Gear-reduction can be arranged for high-speed machines. Guides are built in two sizes: A—for machines up to 120 inches; B—for larger machines. Your present ball bearings can be used in most cases.

Protect your costly Fourdrinier wires and your felts from needless wear . . . eliminate unnecessary down time. Write or call today for full information on Moore & White Wire and Felt Guides.



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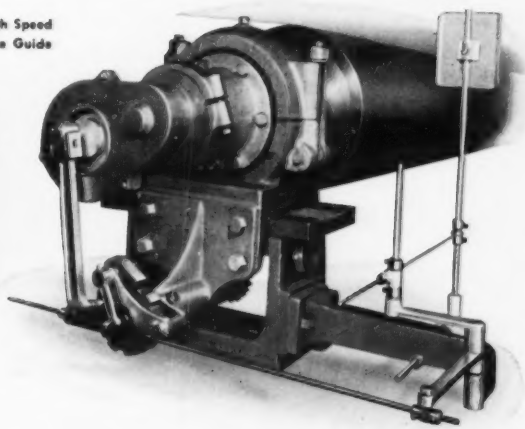

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Custom-Built Machines for Makers of Paper and Paperboard

Canadian Exports, Paper, Pulp and Products

By Countries, 1948

OTTAWA — The Canadian Government reports that exports of paper and pulp as well as products during the 12 months of 1948 were as following to the United States, with total shipments to all countries being given to show the comparative importance of such exports to the American market:

Articles and Destination	12 Mo. Ended Dec. 1948 Qty. (cwt)	Val. ($)
Wood Pulp Sulphate Kraft Bleached		
United States	4,629,396	32,543,045
All Countries	4,650,762	32,720,596
Wood Pulp Sulphate Kraft Unbleached		
United States	2,732,244	16,117,900
All Countries	3,141,212	18,695,519
Pulp Sulphite BL Dissolving		
United States	4,929,259	36,168,219
All Countries	6,185,407	46,090,922
Pulp Sulphite BL Paper Grades		
United States	4,570,180	30,038,361
All Countries	4,846,934	32,406,329
Pulp Sulphite Unbleached Strong		
United States	5,411,501	30,838,362
All Countries	6,639,778	38,137,607
Pulp Sulphite Unbleached News Grade		
United States	3,382,989	18,857,917
All Countries	3,658,561	20,383,767
Wood Pulp Mechanical		
United States	5,258,388	16,546,862
All Countries	5,930,398	19,257,283
Pulpwood Poplar		
United States	274,578*	3,927,288*
All Countries	274,578*	3,927,288*
Pulpwood Other Peeled		
United States	749,935*	14,986,884
All Countries	763,091*	15,351,117*
Pulpwood Other Not Peeled		
United States	1,107,448*	23,322,849*
All Countries	1,149,969*	24,294,463
Wood Pulp Not Otherwise Provided		
United States	506,319	3,288,513
All Countries	506,319	3,288,513
Wood Pulp Screenings Chemical		
United States	230,745	489,515
All Countries	230,745	489,515
Pulp Screenings Mechanical		
United States	162,468	84,204
All Countries	169,848	94,333
Pulp and Fibre Wallboards		
United States	20,596	24,359
All Countries	317,034	1,437,700
Pulpwood for Wallboard		
United States	583,286	2,194,904
All Countries	583,286	2,194,904
Paper Board Not Otherwise Provided		
United States	765,013	3,353,514
All Countries	1,808,850	9,887,003
Book Paper		
United States	501,476	3,018,274
All Countries	737,636	5,840,550
Newsprint Paper		
United States	78,347,320	340,334,045
All Countries	86,561,671	383,122,743
Wrapping Paper Coated		
United States	8	122
All Countries	61,896	719,362
Wrapping Paper Kraft Not Otherwise Provided		
United States	70,795	448,947
All Countries	224,288	1,793,314
Wrapping Paper Not Otherwise Provided		
United States	38,203	214,203
All Countries	145,668	1,097,622
Bond and Writing Paper Uncut		
United States	110	1,827
All Countries	100,722	1,485,841
Bags of Paper		
United States		19,046
All Countries		466,050
Boxes and Cartons of Paper		
United States		213,949
All Countries		1,380,335
Hanging Paper Not Printed		
United States		15,999
All Countries		15,999
Hangings or Wall Paper		
United States	1,340,523*‡	485,063‡
All Countries	2,040,452‡	595,496‡
Roofing and Building Paper		
United States	2,450	9,676
All Countries	106,825	508,582
Newsprint Paper Mutilated		
United States	668,215	2,461,347
All Countries	668,215	2,461,347
Waste Paper Not Otherwise Provided		
United States	303,053	568,033
All Countries	303,706	569,879
Handkerchiefs Tissues of Paper		
United States		96
All Countries		19,755
Napkins and Towels of Paper		
United States		37,752
All Countries		111,402
Tissue Paper		
United States	2,194	18,186
All Countries	15,878	207,298
Toilet Paper		
United States	51,452	691,514
All Countries	114,317	1,472,949
Writing Paper Not Otherwise Provided Envelopes		
United States		3,153
All Countries		225,198
Paper and Manufactures Not Otherwise Provided		
United States		62,636
All Countries		1,068,279

* Cord. ‡ Roll.

Southern Industrial Show

ATLANTA — Operating and maintenance engineering personnel of Southern industrial and service plants will find a diversified group of exhibits at the Fourth Southern Machinery and Metals Exposition in the Atlanta Municipal Auditorium April 25-28.

The Southern Industrial Conference on Machinery and Metals will be held for the fourth consecutive year in conjunction with the Exposition. It will include seminars under the direction of the Engineering Division of Georgia Institute of Technology.

Michael F. Wiedl is executive vice-president of the Fourth Southern Machinery and Metals Exposition, Inc., 267 East Paces Ferry road, N.E.

"Fire Call" New Film

ATLANTA—"Fire Call," the second of a series of 16 mm. colored forestry educational films, has been completed under the sponsorship of the Southern Pulpwood Conservation Ass'n., and the State Forestry Departments of Georgia and Florida, H. J. Malsberger, forester of the Association, reports. The film was produced by the Southern Educational Film Production Service of Athens, Ga. It describes the old and new methods of preventing and controlling forest fires and indicates the savings in forest wealth made possible by utilizing modern methods of locating forest fires and extinguishing them rapidly with mechanical equipment and trained fire crews.

CPPA Tech. Sec. Meet

MONTREAL—The Technical Section of the Canadian Pulp & Paper Ass'n., will meet at the General Brock Hotel, Niagara Falls, Ont., June 1-3, when a diversified program of technical papers and discussion will be scheduled, along with mill visits and entertainment features.

"In the past," says Douglas Jones, secretary-engineer of the Section, "some people have been misinformed and have not attended in the belief that these meetings are open to members only. Such is not the case. Non-members are welcome to attend either the annual or summer meetings of the Technical Section."

Can. Asbestos Paper Stocks

OTTAWA—Canadian producers' shipments of asbestos paper stocks during January this year increased to 6,185 tons compared with 5,446 tons in the same month last year and advanced to a total of 84,857 tons in the 12 months of 1948 as against 82,949 tons in the whole of the preceding year, the Canadian Government announces.

End Naugatuck Floods

WATERBURY, Conn.—Without favoring or opposing the proposed flood control dam at Thomaston, a spokesman for the Naugatuck Valley Industrial Council — which includes several paper manufacturing plants — on March 9 urged that some methods be found to end damaging floods in the valley.

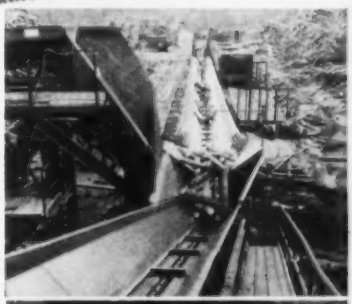
The Line of Most Resistance

REX Pulp Mill Chains

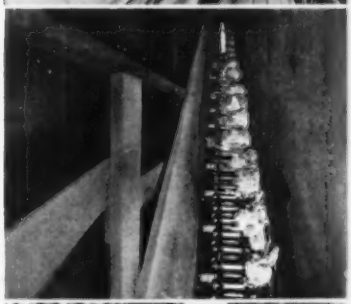
Maximum wear resistance and the *ultimate* in *shock resistance* are built-in features of all Rex Pulp Mill Chains. These quality chains are designed for dependability . . . for long-lasting service under every type of operating condition. Right through the mill, there's a Rex Chain that's right for every operation from log haul to the digesters.

With standard Rex Chains, you can forget about production hold-ups due to drive or conveyor failures. Rex Chains keep going under loads and operating conditions where ordinary chains would quickly fail.

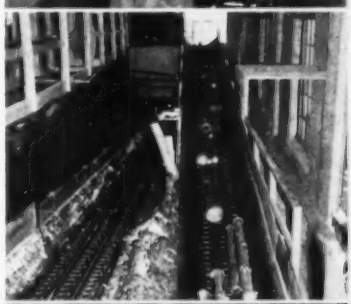
For complete information and selection assistance, call your Rex Field Office or write direct to Chain Belt Company, 1605 West Bruce Street, Milwaukee 4, Wis., for your copy of Catalog 48-27.



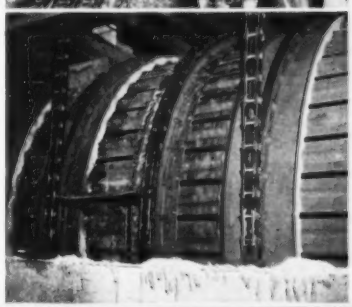
This wood yard conveyor uses husky Rex Mill Refuse and Log Chains. Designed with alternating cast block links and steel side bar links, these chains provide a large sliding surface and maximum bearing area.



Rex H-Type Conveyor Chains are used in this refuse conveyor. Operating in shallow troughs, these chains with their great width assure large capacity at low speeds. Wide wearing shoes, reinforced barrel faces and vertical lugs on the side bars provide extra wear resistance.



One of the most popular chains in the wood room is husky Rex Combination. Inside block links of malleable iron or Rex Z-Metal and high carbon steel side bars assure plenty of wear-resistance. Chain links can be turned over when wear does take place, assuring double life.



Plenty of drive for the barking drum is assured by sturdy Rex Chabelco Steel Chain. Combining relatively light weight with high strength, it withstands the severe vibration and shocks . . . lasts longer.

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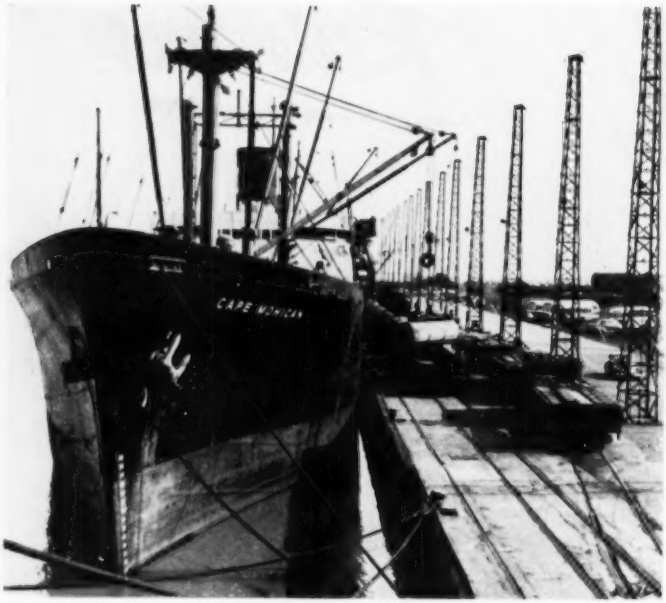

DESTINATION, PAPIERFABRIK UTZENSTORF

A Puseyjones high speed paper making machine weighing 700 tons was recently loaded and shipped from the Wilmington Marine Terminal to Switzerland. . . . This equipment was handled in the Victory ship "Cape Mohican," built at the Puseyjones shipyards in October, 1942, and now leased to the Ibbertson Line, a Swedish shipping firm. . . . Destined for the mill of Papierfabrik Utzenstorf in Utzenstorf, Switzerland, the machine will be unloaded in Rotterdam, then trans-shipped up the Rhine and by canal to Basel, Switzerland, from whence it will proceed by rail a distance of approximately 40 miles to its ultimate destination. . . . The machine will be used to make news print, catalogue and other groundwood specialty papers at manufacturing speed up to 1,200 feet per minute. It is equipped with Puseyjones latest attachments, including Flow Spreader and 72" high adjustable slice, Fourdrinier part for wire 138" wide, 75' long, equipped with Rapi-drape wire changing arrangement, also suction couch; dual press with two suction rolls, also smoothing press arrangement all operated with air loading mechanism; dry part comprises 32-60" dia. paper and 6-60" dia. felt dryers, mounted in roller bearings and driven by means of enclosed gearing; one 8-roll stack of calenders with pneumatic loading; Pope improved reel and Puseyjones winder with roll handling mechanism. The machine will be driven by latest type sectional motor drive, supplied by the Brown Boveri Co. of Switzerland. . . . Installation of the machine will be made soon after arrival and it is expected that paper production will commence about July 1.

Tropical Research Lab.

PANAMA CITY, Panama—Opening of a research laboratory here for the study of phographic materials under tropical conditions was reported by the Eastman Kodak Co., of Rochester, N. Y., on March 17. Facilities include a modern 2-story building in the Juan Franco area of the city and a jungle test station on Barro Colorado Island in Gatun Lake, part of the Panama Canal.

Dr. Walter Clark of Kodak is now here to launch the research program. Cleveland C. Soper, who has been in Panama for several years, is in charge.

Johnston Co. Launched

BOSTON — William L. Johnston, general sales manager of the Marcalus Mfg. Co., has set up his own sales agency under the name of William L. Johnston Co., to handle the sales for Marcalus, Lincoln, N. H., mill. All the personnel of the sales department will be retained, including Nellie A. Fletcher and Mildred B. Richards in the Boston office at 131 State street. The New York office in the Chrysler Building will be included also in the new setup, with Gordon D. Croskery and Miss Anne Kolson. Bernard W. McGrath, of Northampton, Mass., will continue as before, with the new organization. The new company will represent Marcalus throughout the country as direct mill agent.

No Lost Time

SOUTH GLENS FALLS, N. Y. — The South Glens Falls plant of the Marinette Paper Co. was recently awarded the top trophies for its No. 1 position in the National Interplant Safety Contest of the Scott Paper Co. The plant was the first Scott unit to go a full calendar year without a lost-time accident.

Heads Mill Tech. Group

CORINTH, N. Y. — Walter F. Curtis of Palmer, N. Y., was elected president of the Hudson River Mill Technical Ass'n. of the International Paper Co., at the annual business meeting here on March 9, succeeding H. T. Burns.

The other officers elected are L. F. Loveland, vice-president; B. E. Orto, treasurer; George W. Holland, secretary; Milbourne Wells, chairman of education; Leon Lenhart, chairman of entertainment; and J. T. Murphy, chairman of membership. Mr. Curtis is electrical superintendent at the Hudson River Mill and served as the association's vice-president in 1947.

Sawing Contests

OTTAWA—A large crowd packed the parish recreational center in Maniwaki to witness the Canadian International Paper Co. championship sawing contests and divisional winners from Noranda, St. Jovite, Three Rivers, Clova and Maniwaki compete. The winners will go to Montreal to compete at the Sportsmen's Show against contestants from pulp and paper companies throughout Eastern Canada for the Eastern Canada championships.

Cups were presented by Gerard Desjardins, MLA, and J. W. Sutherland, resident manager of Canadian International Paper Co.

Albion Div. Safety Plaque

HOLYOKE, Mass. — A safety award was presented to the Albion Division of the American Writing Paper Corp., on March 1. E. C. Reid, vice-president of the company, said the plaque presented means that the division worked throughout 1948 without any lost-time accidents. The Albion Division's safety committee includes Albert Brunelle, William Glidden, Almer Girard, A. S. Wilson, Miss Margaret F. Walsh (division nurse), John Houlihan, John Scanlon, Thomas Curley, Mrs. Mae Clark, Felix Miske and John Selden.

Envelope Industry

WORCESTER, Mass. — C. Norman Shaffer, president of the New York and Eastern Envelope Mfr's Ass'n., spoke on conditions in the envelope industry before 136 employes and guests of the Sheppard Envelope Co., at the company's recent ninth annual dinner in the Sheraton Hotel.

Miss N. Myra Glazier, president of the company, also spoke on "The Future of the Shepco Family" and presented service pin awards to employes.

Bemis Advances Two

ST. LOUIS—Howard P. Claussen, vice-president in charge of the cotton department of Bemis Bro. Bag Co., at Boston, has been elected to the board of directors and Charles W. Loomis, director of personnel has been elected a vice-president. Mr. Loomis' quarters are in the St. Louis general offices.

Container Production

WASHINGTON — Current production and shipment of most categories of paper and paperboard containers is at near peak levels and demand is being readily met, the Department of Commerce reported on February 28, based on a field survey.

The results of the survey, covering all major types of containers, have been embodied in a special report prepared by Charles A. Lewis, of the Department. This is the quarterly "Containers and Packaging Industry Report."

Prices of containers and packages are expected to remain fairly stable in the first half of 1949, but some price reductions are foreseen by the report, during the latter half of the year. "The consensus of opinion among users and manufacturers is that a buyers' market is developing in this industry," said the department.

Sales of textile bags are below previous years, and the report said prospects for improvement in the remainder of 1949 "are not too good."

Export Packing Group

NEW YORK—A committee has been appointed by the Maritime Ass'n. to study deficiencies in packaging of an important percentage of export cargo, according to President James A. Farrell.

The committee is to report to Mr. Farrell by April 30 as to their recommendations as to the best program to be followed.

Representing shippers on the committee will be Charles H. Bell of Aeon International Corp., John E. Farese of Sterling Products International, and William H. Lukens of the R. M. Hollingshead Corp.

Representing the steamship lines are Willis Jackhon of U.S. Lines, James B. Young of the Barber Steamship Lines, and H. G. Zimmerman of AGWI Lines.

The underwriters representatives are Harold Jackson of William H. McGee & Co.; R. Bruce Miller of the North American Companies, and W. Irving Plitt of the Atlantic Mutual Insurance Co.

Canadian Carloadings

OTTAWA — The Canadian Government reports that a nation-wide survey shows car loadings on the Canadian railways from the beginning of this year until the week ending February 26 involved an increased cumulative total of 35,715 cars of woodpulp and paper as compared with 35,660 cars in the corresponding period a year ago ending February 28, with the Eastern Division accounting for 31,177 cars as against 30,958 cars last year and the Western Division for 4,538 cars this year as against 4,702 cars a year ago.

Such woodpulp and paper car loadings for the week ended February 26 this year amounted to 4,461 cars compared with 4,588 cars in the preceding week or 4,873 cars in the similar week of last year, with the Eastern Division amounting to 3,845 cars for the week ended February 26 this year against 4,007 cars in previous week or 4,245 cars in the similar week of last year and the Western Division rising to 616 cars for the week ended February 26 this year against 581 cars in preceding week or 628 cars in corresponding week of last year.

BROWN-BRIDGE'S JOHN A. SHARTLE AIR-MINDED

Shipments weighing as much as 750 pounds are sent by air in the four-place Navion airplane owned by Brown-Bridge Mills, Inc., Troy, Ohio. John A. "Buster" Shartle, president of the company (pictured in the cockpit), credits the plane as an A-1 sales promotor, flying truck, trouble shooter and good-will booster, as well as an executive timesaver.

Pollution Outlay Deductible

WASHINGTON — Businesses which build facilities to take care of industrial waste, and so prevent stream pollution, would be permitted to deduct such capital improvements as business expense for income tax purposes, under a bill introduced by Senator Wiley, of Wisconsin.

The bill, S. 1118, is a Senate companion measure to H.R. 1343, now pending in the House, and introduced there by Rep. John Byrnes, of Wisconsin.

The Senate bill amends Section 23 of the Internal Revenue Code, relating to deductions allowed in computing net income, by adding a new section to cover cost of plants for treatment of industrial waste. The provision would apply only on taxable years beginning after December 31, 1948, and before January 1, 1955.

Although opposed by the Treasury, the bill has approval of the Interior Department.

Impact of S Saving Control

OTTAWA—A special report tabled in Parliament by the Canadian Government shows the impact of dollar-saving controls on capital expansion in Canada and on the importation of capital goods during 1948, with an analysis and breakdown revealing now, of approved projects under this policy, 36 pertained to projects in the paper products manufacturing industry of Canada with a total capital cost of $106.5 millions, including $93.6 millions Canadian capital goods value and $12.6 million United States capital goods value out of $12.9 million imported capital goods value.

Under this program, there was one approved project classified as forestry and the total capital cost was $4.2 millions, with the value of the Canadian capital goods being $2.7 millions and value of United States capital goods involved $1.5 million out of $1.5 million imported capital goods.

Year's 50 Books

NEW YORK—The opening ceremony for the 27th Annual Exhibition "Fifty Books of the Year" jury selections, organized under the auspices of the American Institute of Graphic Arts, will be broadcast on a NBC hookup from 7:30 to 7:45 the evening of April 5. It will link together the opening of identical exhibitions at the Library of Congress in Washington, Newberry Library in Chicago, and the Public Library here. Two other identical exhibitions will open the same evening in the Boston and San Francisco Public Libraries. All the shows will be on view through April 26. The jury has been instructed to consider paper as one of the basic factors in reaching its decisions.

Stabilizing Questioned

COLUMBUS, Ohio—President Earl O. Shreve of the Chamber of Commerce of the U.S., questions the logic behind government efforts to "stabilize" the so-called boom. Addressing the National Marketing Conference, held by the National Chamber at Columbus, March 8 and 9, Mr. Shreve asserted that the buyer today is in control of the market and what he wants is not stability, "but more and better goods for his money."

AMERICAN PAPER AND PULP ASSOCIATION'S PRODUCTION RATIO REPORT*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1949		Corresponding Weeks—1948	
February 5	93.8	February 7	99.2
February 12	94.2	February 14	100.5
February 19	93.7	February 21	99.4
February 26	90.6	February 28	102.1
March 5 (Revised)	90.6	March 6	99.9
March 12	*91.0	March 13	*100.9

* Capacity in Tons—180,583. * Capacity in Tons—174,668.

COMPARATIVE MONTHLY SUMMARIES

1948						1949	
Jan.	100.1	May	100.5	Oct.	99.1		
Feb.	99.8	June	95.7	Nov.	97.1	Jan.	‡90.6
Mar.	100.8	July	85.3	Dec.	87.1	Feb.	‡93.4
Apr.	100.8	Aug.	96.8				
		Sept.	91.8	Year Avg.	96.2		

‡ Preliminary Ratios.

COMPARATIVE YEARLY SUMMARIES

	1942	1943	1944	1945	1946	1947	1948	1949
Year to Date	103.8	88.4	88.6	87.9	97.5	104.8	100.5	93.4
Year Average	90.4	87.8	88.1	89.4	101.1	104.3	96.3	

PAPERBOARD OPERATING RATIOS†

Current Weeks—1949		Corresponding Weeks—1948	
February 5	87	February 7	100
February 12	86	February 14	101
February 19	86	February 21	99
February 26	80	February 28	101
March 5	79	March 6	104
March 12	80	March 13	102

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1948	99	100	102	102	100	94	81	92	91	96	94	84	95
1949	88	85											

* All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

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Suppliers

U. S. Rubber Co., New York, reports three major staff promotions in its mechanical goods, general products, Lastex yarn and rubber thread divisions. Walter F. Spoerl, general sales manager of the mechanical goods division, has been named general sales manager for all divisions under supervision of Ernest G. Brown. Robert D. Gartrell, development mnaager for the company's Passaic, N. J. plant, has been named development manager for all divisions. Wesley A. Armstrong, factory manager of the company's Bristol, R. I., plant, has been appointed production manager.

Socony-Vacuum Oil Co., Inc., New York, is offering a new line of microcrystalline waxes, reported to be substantially improved over conventional types, with particular respect to toughness, adhesiveness and flexibility at low temperatures. They have been designated as S/V Magnowaxes and are designed especially for the paper and paper-converting industries. These waxes are available also through the Magnolia Petroleum Co. and the General Petroleum Corp., Socony-Vacuum affiliates.

Stuart Research Service, Ltd., which acts as labor relations spokesman for all coast logging operators in British Columbia, and which has its headquarters at 675 West Hastings street, Vancouver, B.C., has changed its name to Forest Industrial Relations, Ltd. R. V. Stuart, organizer of the research service in 1941, remains at the head of the new organization, which will also act as labor relations consultants for the industry.

American Polymer Corp., Peabody, Mass., has completed installation of high-pressure polymerization units which make possible large-volume production of Polyco 350, a synthetic latex compound which is a stable dispersion of a flexible high styrene copolymer resin. The product offered is particularly suitable as a replacement for casein in binding pigments in the manufacture of paper coatings.

Bagley & Sewall Co., Watertown, N. Y., on March 14 elected Dr. Mark Harwood to its directorate, increasing the number of directors on the board to five. Dr. Harwood is a son-in-law of Abe Cooper, president.

American Brake Shoe Co. is expanding sales activities in Cleveland with the addition of the National Bearing Division in its offices at 915 Midland building. L. E. Hoyer and J. Robert Lottes, National Bearing sales repre-

sentatives, will join representatives of the company's Brake Shoe & Castings, Southern Wheel, and Ramapo Ajax Divisions in the enlarged office. Their activities will be under the direction of James J. Nelson, eastern sales manager for National Bearing.

Dr. Robert S. Aries has launched R. S. Aries & Associates, at 26 Court street, Brooklyn, N. Y., to perform market evaluations, application research, technical audits of mills and financial surveys for management. The firm is currently designing a hardwood pulp unit and recovery system and is engaged in other projects for clients. During the last eight years, Dr. Aries has been technical director of the Northeastern Wood Utilization Council and consultant to pulp and paper mills in the U.S., Sweden, France and Belgium. He will continue serving the Council, as well as being adjunct professor of chemical engineering at Polytechnic Institute, Brooklyn, in charge of the graduate work in pulp and paper technology.

The firm has particular knowledge and patents in the field of waste liquor utilization, special coatings, hardwood pulping, combinations of cellulose and resins and stream pollution abatement. Among topics offered for consultation may be included the economics and manufacture of by-product lignin, alcohol and yeast; recovery of neutral sulfite semi-chemical liquors; tall oil and sulfate turpentine, bark, furfural, wallboards, small pulp mills, chemical pulps from hardwoods, the use of annual grasses, plastic coatings and combinations and the manufacture and use of specialty papers.

Kinsley International Corp. will be set up in New York in April and capital stock, originally valued at $165,000, will be expanded from 25,000 shares to 100,000 to help provide funds for erection of a new plant in Cleveland, H. Lee Kinsley, president of the Kinsley Chemical Co., stated in Cleveland early this month. Mills employing the Kinsley process of utilizing straw in manufacturing newsprint are reported to be projected for Cuba, Puerto Rico, Spain, Uruguay, Argentina, South Africa and Turkey, as well as for our own state of Louisiana.

F. C. Huyck & Sons' branch plant opened at Ticonderoga, N. Y., in the summer of 1946 to take care of excess production requirements in yarn rewinding and the mending and joining of papermakers' felts, will discontinue operations as of approximately June 30. Provision for the extra production in these operations provided in a construction and modernization program at Rensselaer, N. Y., will be completed this summer as originally scheduled.

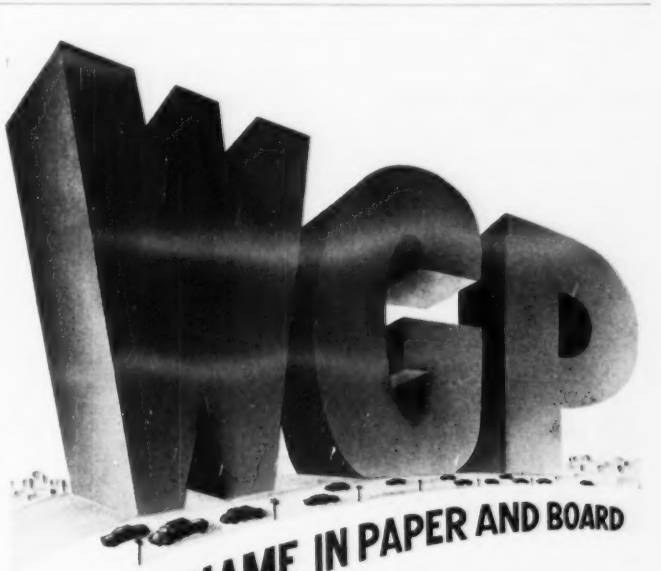
Technical and commercial aspects of Ni-Resist, including production, applications and promotion, will be discussed at a series of meetings sponsored by the International Nickel Co., to be held in Chicago, March 25; Montreal, March 30; Springfield, Mass., April 8; Philadelphia, April 15; Cleveland, April 22; Birmingham, Ala., May 19; San Francisco, September 16, and Los Angeles, September 23.

A. E. Staley Mfg. Co., Decatur, Ill., plans to replace its old soybean oil expeller plant with a modern solvent extraction plant at a cost of "several million dollars", E. K. Scheiter, executive vice-president of the corn and soybean processing company reports.

Stephen Goerl Associates, New York, has sent a questionnaire to several hundreds of top industry executives through which individuals can give exact expression of the type of labor laws they want Congress to pass.

Robert L. Zahour has rejoined the Westinghouse Lamp Division, Bloomfield, N.J., and will handle special lamp applications, according to Ralph R. Brady, manager of commercial engineering.

Kohler System Co., Chicago, has consummated an agreement with the Black-Clawson Co. of Hamilton, Ohio, under which Black-Clawson will manu-



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facture and sell, except in Canada, Kohler magazine reels for unwinding and winding, the flying paster, the winding roll changer, and other items of equipment which Kohler heretofore designed and sold. Actual operations will be conducted by the Dilts Machine Works Division Black-Clawson at Fulton, N. Y. The Kohler engineering staff will be located at Fulton and the Chicago sales office will be maintained at 159 East Chicago ave., present address. Correspondence should be directed to Fulton.

Dilts will supply Kohler equipment for independent application to all processes and machines where it may prove of value. The firm is now in a position to include this equipment in complete "packaged units" of all types of converting process machinery.

March Industry Report

(Continued from page 45)

can produce in their own mills. Some instances are reported of attempts to unload the papers produced in these "captive" mills at cut-rate prices. Future months will probably see some of these mills closed down or shifted to other types of paper.

Newsprint

Production of newsprint in North America during January was about 28,000 tons, or 6 percent, above the output for January 1948. About one-half of this increase in tonnage was contributed by Canada. The United States increased its output by about 7,000 tons, or 10 percent, and Newfoundland by 6,500 tons, or 23 percent. Shipments of newsprint to the United States by both Canada and Newfoundland during January were larger than during the same month in 1948.

January newsprint consumption dropped off about 8 percent when compared with December. This is a seasonal decline, however, which takes place each year. Compared with the same month in 1948, January consumption shows a rise of 14 percent.

Reports from the various Field Offices indicate that newsprint supplies have about caught up with demand. Spot market prices have fallen rapidly in recent months. Gray market prices are reported to have disappeared and that dealers are offering newsprint in the spot market at not much above contract prices. Only one Commerce office, located in the South, reported newsprint supplies still tight. Newspapers in that area are supplied with contract newsprint on a 1941 consumption basis but open market newsprint is more free than in previous months and is still bringing premium prices. Foreign newsprint was reported generally in short supply.

Stocks in the hands of publishers, as reported by the American Newspaper Publisher's Ass'n., represented at the end of January a 45-day supply, compared with 39 days at the end of December and a 41-day supply at the end of January 1948.

Groundwood Printing, Book, and Fine Papers

New orders placed with mills producing printing and other fine papers are reported to have been generally lower than those placed during the same month in 1948. The self-contained mills in this segment of the industry are working on a 6-day and 5-day week. Many of the pulp-purchasing mills, however, are still on 3 and 4 day schedules. Their prospects have improved recently with the fall in the price of market pulp, which puts them in a better competitive position with their integrated rivals.

Prices of fine writing papers in some instances have been reduced as much as $10 to $30 per ton in eastern markets according to trade reports. Prices of cheap grades of book papers have also declined slightly in some markets but sulphite bond papers and best grades of book papers have held fairly firm in price. Printers are the largest buyers of these papers and are reported not to be interested in seeking cheaper grades. The cost ratio of the paper stock to the other costs involved in making up an order is such that the printer cannot afford to take risks with an inferior grade of paper.

Coarse Papers

The supply of these papers are reported adequate from all sections of the country. This includes kraft papers where production now is more than sufficient to meet current requirements. Manufacturers of these papers are now encountering the competition which developed some months ago in other segments of the industry. Kraft mills continue to operate at a high level but are showing a greater willingness to meet customers' special demands. Some price adjustments have been reported. Northern mills, some of which are non-integrated, are finding competition from the Southern mills hard to meet. One northern mill has closed down its kraft producing unit temporarily for repairs and modernization of its equipment.

New orders placed with the kraft mills during January were slightly under those placed in the previous year. The principal decline seems to be in the market for converting kraft papers. New orders placed for these latter grades in January was considerably below the same month last year, the backlog of orders is also considerably lower, while stocks at the mills have risen by 10 percent. Bag papers, although reported in surplus supply, statistically are in a better position. New orders placed during January of the current year are about on a level with the same month last year, and the backlog of orders at the mills was about the same. Mill stocks, however, were considerably larger than last year. Kraft wrapping papers at the end of January did not show much change compared with a year previous. New orders placed with the mills during January were slightly higher, and the backlog of orders at the mills at the end of January was slightly lower than a year ago. Stocks at the mills were approximately the same on both dates.

Sanitary, Tissue, and Absorbent Papers

Supplies of sanitary, tissue, and absorbent papers are adequate in all sections of the country, according to reports from Commerce Department Field Offices. With the improvement in the supply situation has come the general tendency toward reduction in prices.

A report from the Lake States region indicates that February demand for good quality grades of toilet tissue was 10 percent below January and that, in order to meet the challenge of the 10-cent roll, some manufacturers of the higher quality product lowered their prices as much as 10 percent. There is an ample supply of facial tissue in this area, with some price adjustments being made on an individual order basis. The demand for better grades of toweling has remained steady while that for industrial grades of lower quality has fallen as much as 5 percent. The sales volume for all grades

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in this region is approximately 10 percent below sales in the corresponding period of 1948. Another report from the Great Lakes area indicates there is increasingly keen competition for outlets for tissue paper, which several months ago was unobtainable in any quantity. Prices are easier although reasonably firm, while buying is on a hand to mouth basis.

Price reductions of 5 percent by several mills in the New England area are reported for lower grades of sanitary, tissue, and absorbent papers.

January 1949 production of sanitary, tissue, and absorbent papers, although above the December 1948 level except for absorbent paper, was below the output in the same month of 1948.

Boards

Production of boards was down 6 percent in January compared with January 1948. Production of kraft container board is running well above the level of last year, but the demand for folding box boards, set-up boxboards, container chip, and filler boards, continues slow. The market for building papers, roofing stock, and insulating boards was also weak. January production of building boards was about on a level with the same month last year, but production of building papers declined 31 percent. The falling-off in demand is partly seasonal and is due to the usual decline in building during the winter months. There is also a reluctance on the part of dealers to stock building materials at a time when construction industry shows a tendency to level off.

PRICES

Bureau of Labor Statistics data on wholesale prices (index 1926 = 100) registered little change in January 1949 over the preceding month. No change is indicated in the price index of individual paper items, while two grades of paperboard recorded decreases in January compared with the December 1948 indexes. Wholesale prices of all of the waste paper classes (index August 1939 = 100) dropped in January 1949 below those in the preceding month. (See accompanying table.)

Recent reports from Commerce Department Field Offices reveal a downward price trend for some types of paper at the distributors' level but indicate, as Bureau of Labor data show, a general firmness of mill prices through January. Most notable exception were price declines in some board grades.

LABOR

Commerce Department Field Offices report continuing satisfactory labor conditions within the pulp and paper industry.

Production-worker employment in the paper and allied products industries during December 1948 amounted to 401,000, a decrease of 2,000 from the November total but an increase of 3,000 over December 1947 employment.

Hourly earnings in the paper and allied products industriese dropped slightly in December 1948, after reaching an all-time peak in November.

With the exception of the paper bag segment, all of the industries comprising the paper and allied products group worked fewer hours in December 1948 than in the preceding month but worked more hours than in December 1947.

As a result of the fewer working hours and lower hourly earnings, average weekly earnings in the paper and allied products industries during December 1948 declined below the record level in November.

Letters

Tokyo, March 14, 1949

Dear Arthur:

It has been many months since we talked and you wonder about my experience in Japan compared to that in Austria. That was one of the small paper producers in Europe, while Japan is the largest paper producer in Asia, in fact, outside of Europe and North America, so here goes.

Japan showed a high prewar "civilization potential" by producing 1,700,000 tons of paper in 1940, equal to a per capita consumption of 44 pounds. In the year of the surrender, production sank to 229,000 ST going as low as 9,000 tons in August, 1945, but has increased under SCAP (Supreme Commander for the Allied Powers), to a present 500,000 ton annual rate. The country is going to need much more paper than ever before and needs more desperately now if the reorientation policy of SCAP which depends on newspapers, periodicals and education textbooks, note books, administrative paper and circulars, are to be supplied along with increasing industrial activity and public needs.

The industry is interesting because of its three distinct branches unparalleled in other countries. (1) Hand made paper, (about 5% of the total) in which best fibres such as kozo, mitsumata and gampi have been used from ancient times. They almost never use rosin size, but tororo-aoi or shibita are used as physical dispersing agents to give even formation in their thin papers. (2) Japanese style machine made papers, about 20% of the total, in some kinds of which wood pulp and old papers are mixed. (3) Modern papers, about 75% of the total, made from the same fibres used in other countries, among which wood pulp is as predominant as it is in America.

Another difference between Japanese mills and those in America or Europe is the great variation in capacity. There is a newsprint mill at Tomakomai in Hokkaido, which produces 375 tons per day now—and has a potential capacity of over 500 tons daily—a big mill anywhere. Over a score of other mills each produces up to 100 tons a day, and 400 small mills, 250 of which produce from 2 tons to as little as ¼ ton per day.

SCAP thru Industry Division of ESS is fostering and developing interest in other fibres, straw, bamboo, etc., and the paper companies are responding with good new work. However, substantial production from these sources is a long way in the future for it involves an expensive mill building program. Not only will the new demands have to be met, but the 900,000 tons of paper or its equivalent pulp or pulpwood that was lost in the war with the colonies, will first have to be made up.

Japan has a large problem on its hands to recover its former position in paper production and more of a problem to take care of the increased demands of the future. Present costs of imported pulpwood are prohibitive and may continue so for some time to come. However, if distribution of their annual timber yield is gradually worked out and production of fibres from straw, bamboo, etc., is prosecuted properly, they can become self-sustaining.

Best regards to all there.

A. S. COSLER
Head, Paper and Pulp Group
GHQ, SCAP, ESS, IND
APO 500, c/o P.M.
San Francisco, Cal.

Gentlemen:

We need Vol. 124, No. 26, June 26, 1947 issue of *Paper Trade Journal* to complete a volume for binding. We shall appreciate it very much if you can send us a copy as we have been binding this journal for years and would hate to have a missing number in our files. If there is a charge, we shall remit upon receipt of the publications.

HELEN BOYD
Librarian
Louisiana Branch
U. S. Dep't. of Agriculture
New Orleans, La.

Dear Sir:

This is a tribute to my old, good friend, William G. MacNaughton. The old timers are passing on and I hope that you will publish this in memory of one I thought so highly of.

Respectfully years,
COLONEL HANS LAGERLOEF
52 Vandervilt Avenue
New York 17, N. Y.

Ed. Note: See "Obituaries," Paper Trade Journal, February 10, 1948.

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CCDA Annual Meeting

(Continued from page 11)

Corp. of America, opening the meeting, touched briefly on various items of interest in development activity.

Carbide and Carbon Chemicals Corp's. practice in studying toxicological problems in new chemical development was outlined by Dr. H. F. Smyth, Jr., administrative fellow, Mellon Institute, Pittsburgh, in his paper "Range-Finding Tests — Toxicological Control in New Product Development."

In the second and concluding paper of the morning session, "Dermatitis Among the Public From New Fabrics, Dyes and Finishes," Louis Schwartz, M.D., consultant dermatologist, Washington, D. C., summarized dermatitis experience in the indicated fields, including both natural and synthetic fibers and fabrics in his presentation. Glass fiber and fabrics and furs also were included.

The afternoon session was a symposium on "Sales Promotion and Advertising in Commercial Chemical Development." George King, assistant director of sales, Industrial Chemicals Department, Atlas Powder Co., gave the technical sales manager's viewpoint, using in illustration the advertising and development teamwork that marked his company's building of markets for Mannitol and Sorbitol.

The viewpoint of a research director was given by Dr. Harlan Trumbull, assistant to the director of research, B. F. Goodrich Co.

Paul B. Slawter, Jr., vice-president, House of J. Hayden Twiss, closed the technical program with "An Advertising Man's Viewpoint."

John B. Calkin, consultant, New York, occupied the chair at the luncheon and dinner sessions, each of which was followed by a stimulating and authoritative address on a timely subject.

Dr. Paul C. Aebersold, chief, isotopes division, Oak Ridge Operations, U. S. Atomic Energy Commission, Oak Ridge, Tenn., spoke at the luncheon on "The Development of the Isotope Distribution Program."

Dr. Aebersold commented descriptively on the nature of "radioisotopes," and their use as tracer atoms, and stated that "Tracer atoms provide one of the most powerful tools yet placed at the disposal of scientific investigators."

Dr. Lauren B. Hitchcock, president of CCDA, gave the dinner address on the subject of "Putting New Chemicals to Work."

Dr. Hitchcock stated that contrary to earlier days when "the cry was for research and yet more research," the emphasis now is shifting to "the utilization of research."

Dr. Hitchcock described the experiences of several companies in the chemical field, which in attempting to manufacture one product, have produced by-products which eventually became much more valuable and important then the original product. Among companies mentioned whose present most profitable items are derivations from, or were originally by-products, are American Cyanamid, Dow Chemical, Carbide & Carbon and Shell Development.

Dr. Hitchcock mentioned an incident when his own organization, the Quaker Oats Co., decided to make cattle food by the acid digestion of oat hulls. Furfural was an unexpected product of this process, and has since become important for the production of hexamethylenediamine, one of the ingredients of nylon, and furfural alcohol a useful solvent.

Dr. Hitchcock suggested that it would be advantageous for chemical companies to form commercial development departments to take over the development of new products and thus relieve the sales and research departments of these functions.

After drawing attention to the formation of the Chemical Market Research Ass'n. in 1940, the CCDA in 1943 and the Chemical Marketing Section of the American Chemical Society in 1947, Dr. Hitchcock outlined the stages in developing a new chemical to the commercial scale and the place of a commercial development department in the organization setup of a chemical company.

GOOD DELIVERY — MODERATE PRICED

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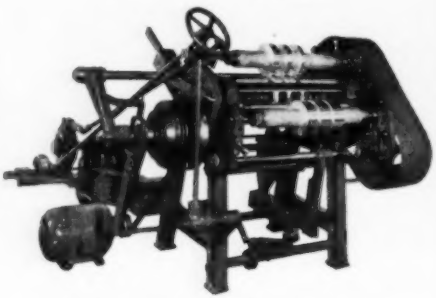

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Designed for Slitting Cellophane—Foil and Acetate Stock

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Special Paper Converting Machinery

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Single Instrument Measures Smoothness, Porosity and Softness of Paper

You just interchange the lower test plates in the GURLEY-HILL S-P-S Tester to convert it into an instrument for testing either smoothness, porosity or softness of any type of paper, by measuring a given air-leakage over or through the paper.

This 3 in 1 laboratory "assistant" is simple to operate, quick and accurate, and a real utility instrument where printing quality of paper must be reliably measured.

Bulletin No. 1400 describes the S-P-S Tester as well as other Gurley paper testing instruments. It's worth writing for today. W. & L. E. Gurley, 520 Fulton St., Troy, New York.

Obituary

Charles E. Duncan, 78, of Watertown, N. Y., a former salesman for the Dexter Sulphite Pulp & Paper Co. and the Frontenac Paper Co., died on March 17 in a Buffalo, N. Y., hospital. Mr. Duncan was identified with the paper industry most of his life and some years ago was sales manager of the Minnesota & Ontario Paper Co. and the Detroit Sulphite Co. He was with Dexter for 30 years. After new management took over a few years ago, he joined the Groveton Paper Co. of Groveton, N. H., as traveling representative. Recently he had been with the Frontenac company. Two sisters survive.

Charles M. Cook, 60, vice-president of the Raymond & McNutt Co., Philadelphia, died March 15, in Presbyterian Hospital. He is survived by his widow, Mrs. Ruth J. Cook; a daughter, Jane; and a brother, Henry Cook, Jr.

Joseph Weil, 76, president of the Cromwell Paper Co., Chicago, died in a Coronado, Calif., hospital on March 12, following a brief illness.

William J. Lupton, 69, who retired as superintendent of the Klintkote Co., Lockport, N.Y., about ten years ago, died in that city unexpectedly of a heart attack at Lockport City Hospital on March 6. Surviving him are his widow, Mrs. Bertha Wood Lupton, and a son, William R. Lupton, Mayor of Niagara Falls, N.Y.

Charles Belsky, 71, president of Charles Belsky & Sons, Inc., Holyoke, Mass., paper mill supplier, was killed in an automobile accident at Glen Burnie, Md., on March 18, while enroute home from a Florida vacation. Also killed with Mr. Belsky was his son, Abraham, a attorney, aged 45.

J. W. Valiant, 61, vice-president and a director of the Harris-Seybold Co., for many years, died on March 12 following a heart attack in Miami, Fla. He had been in ill health since last June.

Charles Hafemann, proprietor of the Hafemann Paper Co., Milwaukee, and secretary of the Wisconsin Paper Merchants Ass'n., died at his home in that city on March 10.

Arthur Burley, 59, chief clerk in the traffic department of the International Paper Co., New York City, died on March 14 at his home in Elmhurst, Queens. Surviving are three sisters: Mrs. Margaret Mathews, Mrs. Arnold Gelinar and Mrs. Annie Beresford.

Roscoe Taylor, manager of the Fort Wayne, Ind., branch of the Butler Paper Co., died in that city March 13.

Jet Plane Traveler

HUDSON FALLS, N.Y. — Paul C. Mitchell, an employe at the Savannah, Ga., plant of the Union Bag & Paper Corp., who is a captain in the Georgia National Guard, flew a 600-mile-an-hour jet plane, an F-80 Shooting Star, from Savannah to Albany, N. Y., this week, en route to the Union Bag plant here. In landing at Albany the tires of the plane were damaged and it was several days before he could get them replaced. Once replaced, however, Captain Mitchell flew up to give Hudson Falls and Glens Falls people their first sight of a jet plane.

Buys Fiber Mill

PORTSMOUTH, N.H.—The Fibertex Corp., has purchased the fiber mill of the Morley Co., button manufacturer, D. C. Packard is Fibertex general manager.

Weston to Tape, Inc.

GREEN BAY, Wis.—Joe Weston is now with Tape, Inc. He was formerly with the Straubel Paper Co.

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Approx. 75,000 sq. ft. floor space, 4 acres land, Sprinklered, two Electric Elevators, 3 150 H.P. Boilers, Heavy construction loading floors, High Ceilings, Loading Platforms.

Sale Includes:

MACHINERY and EQUIPMENT:

66" Fourdrinier Paper Machine (Rice Barton & Fales), 40' x 66" wire, 2 Suction Boxes, 3 Presses, 14-28" Driers, Size Tub, 5-36" Driers, 1 Roll Breaker Calender, Machine Sheeter and Roll Attachment, Tachometer and Dryer Regulator, 2 Tolhurst Centrifugals and Motors, Fourdrinier drive 40 HP motor and controls.

2 Noble and Wood Pony Monarch Jordans to 50 HP motor; 6 *Holland Beaters and Washers* 800 to 1200 lb.; Rice Barton & Fales *Louvre Pulper 20*; Rotary Bleach Boiler 6 x 20; Holyoke 3 Roll and 5 Roll Super Sheet Calenders 28" and 46"; Norwood Plating Calenders 16 x 36; *Seybold 84" Paper Cutter*; Clark Aiken 36" Revolving Paper Cutter; Lester and Wasley Deckel Edge Machine 26" Leader; Perkins Rag Cutter 22"; Holyoke Rag Thresher 8 ft. Pasting Machine 30" x 12"; 1000 ft. Clip Hand Up Lines; 2 Holyoke Fan Dusters 54" x 14'; Stuff Chests with agitators; Noble and Wood Stuff Pumps; Steam Pumps; Centrifugal Pumps; Norwood Con-Grav. Filters cap 1½ Million gal. 24 hours; Sample Beater 6 x 6; Mullen Tester; 2 Jolly Water Wheels 51"; Dandy Rolls; Water Marks;

Factory Equipment:

Fairbanks Dial Scale 2500 lb; Revolvator 4 ft. lift; Portable Bale Hoist 1500 lb. 10 ft.; Budgit Elec. Hoists; Toledo and Howe Scales; Sterling 54" Blower; Saw Table 84" x 60"; Auto. Knife Grinder; Ames Engine Lathe 24" x 16"; Barnes Upright Drill 24"; Canvas Belt Conveyor; *Motor from 1 to 250 HP 3 phase,* 60 cycle, 550 volt; 6 panel switchboard; 5-60KVA capacitors; 3 Westinghouse Transformers 125KVA; Air Compressors;

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PAPER INVENTORY: **Book, Covers, Text, Drawing and Specialty Papers**

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M-24

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"EXCELSIOR" FELTS

Manufacturers of Felts of Superior Quality
for Every Grade of Pulp and Paper

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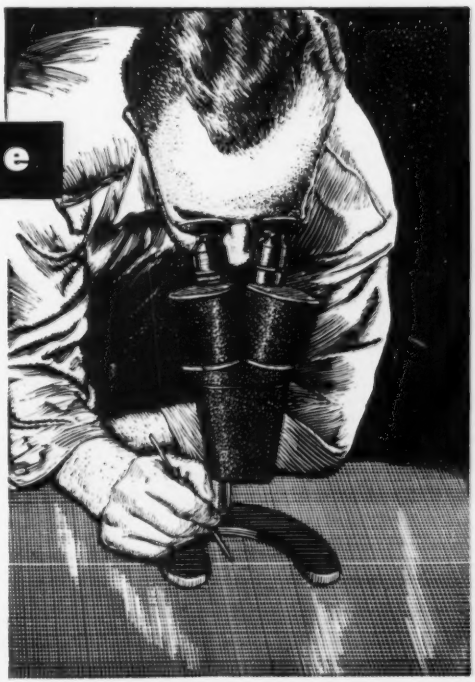
For over half a century, master craftsmen have been perfecting experience-proven manufacturing techniques . . . another reason why *Appleton Wires are Good Wires.*



APPLETON WIRE WORKS, INC.
APPLETON, WISCONSIN

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HELP WANTED

WANTED
PAPER RESEARCH CHEMIST

to supervise group of 6 to 8 men on development of paper products in research laboratory of upper midwest manufacturer of bleached groundwood, sulphite and kraft printing and converting papers. Must be well grounded in paper chemistry and manufacturing processes with development experience in these fields. Prefer man 30 to 40 years old with a good knowledge of book grade bleached papers and enamel grade coated papers. In reply give personal history, training, experience and salary expected.

Address Box 49-52, care Paper Trade Journal. TF

MANAGER OF MANUFACTURING

required by Canadian mill producing 500 tons per day of Specialty Papers, Tissues, Paperboard and Newsprint. Position requires proven managerial ability and technical qualifications for the production of paper. The location is most desirable and salary attractive. Applications giving all essential information will be kept confidential if desired — and should be addressed to

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c/o Paper Trade Journal
M-24

WANTED: Tour Boss experienced in cylinder machine operation capable of maintaining production and quality on better grades folding boxboard. Excellent opportunity for the right man. Give full details in your reply. Box 49-135 care Paper Trade Journal. M-24

HELP WANTED

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Positions Open

Manager to take full charge of manufacturing in large mills manufacturing specialty papers, tissues, paper board, newsprint; attractive salary for the right man. Superintendent, assistant superintendents and color mixers for coating plants.

Beater engineers, chemists and technicians; boss machine tender (Fourdrinier); assistant chief power plant engineer; paper salesmen for Eastern, Central and Northern States, also young technical graduate to sell chemicals to paper mills.

We invite correspondence (confidential) with mills seeking executives and with executives seeking new positions.

CHARLES P. RAYMOND SERVICE, INC.
294 Washington St., Boston 8, Mass. M-24

MACHINERY SALES ENGINEER

Exceptional opportunity for man, aged 30 to 38, to represent leading builder of pulp and paper machinery in East or in Mid-West. Salary and expenses, with excellent prospects of advancement for man who combines mechanical sense with selling ability. Write, giving full details as to qualifications, training and experience. Our organization knows about this advertisement. Address Box 49-122 care Paper Trade Journal. M-24

SALARIED POSITIONS $3,500—$35,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (39 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, INC.
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CHIEF CHEMIST WANTED for a board specialty mill. Address Box 49-84 care Paper Trade Journal. M-24

WANTED—TOUR BOSS. Large Writing Paper Mill. Must be familiar with sulphite and rag writing papers. The mill is located outside of Philadelphia. Address Box 49-125 care Paper Trade Journal. A-7

PLANT MANAGER—Must have production and sales experience. Position located in middlewest. Paper converting plant. State experience, history of employment and salary expected. Address Box 49-130 care Paper Trade Journal. M-24

HELP WANTED

SALESMAN—Fully experienced paper board salesman to handle output of specialty board mill in New York area. Investment possibility for qualified man. Address Box 49-142 care Paper Trade Journal. M-31

WANTED—Machine Tender and a Beater Engineer with cylinder machine experience. Mill located in Eastern State. Address Box 49-165 care Paper Trade Journal. A-7

SITUATIONS WANTED

MILL MANAGER OR GENERAL SUPERINTENDENT AVAILABLE SOON. YOUNG, AGGRESSIVE MAN WITH OVER TWENTY YEARS EXPERIENCE IN PULP, PAPER AND BOARD. HAS TECHNICAL AS WELL AS OPERATION KNOWLEDGE. FAMILIAR WITH MARKETING AND CONVERSION PROBLEMS. WANT ASSOCIATION WITH PROGRESSIVE COMPANY. ADDRESS BOX 49-156 CARE PAPER TRADE JOURNAL. M-31

TECHNICALLY TRAINED EXECUTIVE: Broad experience with kraft and sulfite pulps; specialty papers and paper board. Successful background in research, production development, production and management of operations and sales. Address Box No. 49-157 care Paper Trade Journal. M-31

RESEARCH DIRECTOR AND CHIEF CHEMIST —with a large paperboard and specialty mill for 12 years, many successful developments, finds change necessary. Health and appearance good, married, with family, desire permanent position with well established company. Expect salary to start less than now received. Address Box 49-133, care Paper Trade Journal. A-7

RESIN TECHNOLOGIST:—Desires opportunity to use experience, ideas, initiative and administrative ability. Highly successful background in formulation and uses of resins, waxes and rubbers. Proven ability in all phases of both solvent and hot melt type protective and decorative coatings, laminants, adhesives, specialty paints, lacquers, inks, saturants. Age 33. $6500 minimum. Address Box 49-150 care Paper Trade Journal. M-24

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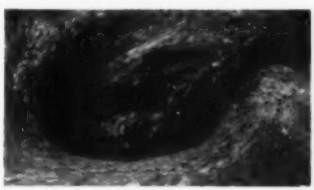
you don't even have to be told what it is—papermakers the world over know it at sight.

Because it can do so much work in so little space—is a packaged proposition.

Because, when required, the Junk Remover snuggles up close and the Ragger nestles down in it, neither taking up any worth-while additional floor space.



Because the rotor has the stamina and power of an elephant and the tearing action of a tiger.

Because the powerful driving mechanism sits between its legs and really takes no usable room at all.

Because it does its work so fast, so well, and in such great volume that nothing else for the purpose can hold a candle to it.

Because it shunts aside monkey wrenches and brickbats, rags and rope, and what have you without batting an eyelash.

Because it can hold a ton or two of pulp 'til digested then disgorge all at once (batch); or take "nourishment" in a steady flow and discharge as made ready in a continuous and steady stream.

It's amazing. It has literally swept the American scene since introduced a few short years ago, and is really "beginning to roll" in almost all papermaking foreign lands as well.

What is it? No $64 question that.

SHARTLE BROS. MACHINE CO., Middletown, Ohio
DILTS MACHINE WORKS, Fulton, New York

B-C INTERNATIONAL, LTD., 16 Catherine Place, Victoria, London S-W-1, England
DIVISIONS OF THE BLACK-CLAWSON COMPANY, HAMILTON, OHIO • Western Sales Office: Mayer Bldg., Portland, Oregon • Associate: ALEXANDER FLECK LIMITED, Ottawa, Canada

SITUATIONS WANTED

BEATER ENGINEER—wants position after April 1st. Married, temperate habits. Accustomed to all grades rag or wood. Address Box 49-118 care Paper Trade Journal. A-7

ENGINEER—MGR. 26 years experience in the pulp, paper and board industry in plant operating and engineering supervision. Extensive background of chemical and semi-chemical pulping. Production, maintenance, power and construction. Invites correspondence. Address Box 49-155 care Paper Trade Journal. A-14

MILL REPRESENTATIVE — Excellent 12 year record selling bond, mimeograph, cover, bristol, book, writing, wrapping and specialties to merchants and converters. Best references, B. S. degree. Seeks agency Los Angeles area. Address Box 49-160 care Paper Trade Journal. M-24

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PLANT MANAGER—Thorough experience in converting paper and boards; wants change to position offering better opportunity. Excellent production and labor relations background. Address Box 49-15 care Paper Trade Journal. A-28

SALES ENGINEER — Industrial adhesives and starches in New England and Northern New York. College graduate and experienced technologist. Several years experience selling and demonstrating and servicing paper mills and converters. Now employed, but wishes to improve position. Address Box 49-152 care Paper Trade Journal. M-31

FOR SALE

FOR SALE—20 Tons Rosin Size. Warrensburg Pulp and Paper Corp., 220 East 42nd Street, NYC. VA 6-4126. M-24

FOR SALE

FOR SALE

44" & 65" Paper Power Cutters, like new; Casters; Waxers; Sheeters; Die Cutters; Printers; Slitters & Rewinders. Write for Price Bulletin #135 listing over 70 Paper Converting Machines. Priced exceptionally low.

South Wabash Engineering Co. Inc.
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FOR SALE AND REMOVAL: Complete equipment in operating plant for the production of coated and printed paper specialties. Conversion to roll or sheet form. Includes waxer, coater, laminator, printing presses, winder and sheeter, complete with motors. For full particulars and prices address Gibbs-Brower Company, Inc., 21 E. 40th Street, N. Y. M-24

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1—102" Cameron Type 18—60" diameter rewind capacity.

BARKERS

1—8' Carthage Disc Barker

BEATERS

3—1000 lb. Dilts Beaters—Iron Tub.
1—600 lb. Beater—iron tub.

BRASS FELT ROLLS

9—4" diameter x 140" face (with bearings).

BREAST ROLLS

1—100" x 14".
3—114" x 14".
1—120" x 14"

CALENDER STACK

1—72" 5 roll Calendar Stack.

CRUSHERS

1—18" x 18" Jeffrey Single Roll Crusher

CYLINDER MOULDS

1—36" diameter x 80" face.
1—30" diameter x 72" face.
1—36" diameter x 79" face.

DECKER

1—Decker—48" diameter x 84" cylinder mold

DRIVES

2—#4 Reeves Drives.
1—#2 Reeves Drive.
1—Smith & Winchester mortise gear Drive.
1—D. O. James 75 H.P. Speed Reducer with couplings and motor base. Ratio 2:16 to 1. 900 RPM.
1—Foote—7½ h.p. Speed Reducer (Ratio 240 to 1)
2—Smith & Winchester Mortise Gear Drives with 26" diameter clutches—Ratio 8 to 1.

DRIVES (Angle)

1—General Machine Company 16 : 1.
1—Philadelphia 50:1 — 1 h.p. — 1200 r.p.m.
2—Philadelphia 21½:1 — 3 h.p. — 1200 r.p.m.

V-BELT DRIVE

1—81⅝" diameter x 7¼" face, 5 groove.
1—16½" diameter x 7¼" face, 5 groove. (With clutch).

DRYERS

9—36" diameter x 76" face.
1—48" diameter x 91" face.
1—48" diameter x 94" face.
8—85" x 120" (Baby Dryers).
2—36" x 142".
1—24" x 130".

FLAT SCREENS

2—12 Plate Murray Dunbar Flat Screens.
1—8 plate Packer Type Flat Screen.
1—6 plate Shartle Flat Screen.

HYDRAULIC PRESS

1—Watson-Stillman Co. (Platen 24" x 24").

JORDANS

1—Noble & Wood, Pony Monarch, Belt Driven.
2—Noble and Wood—Mammoth Type.

MISCELLANEOUS

1—Caustic Mixer.

MOTORS

2—5 h.p. ball bearing—splash proof motors —3/60/440, 1160 r.p.m.
1—½ h.p. ball bearing—splash proof gearhead motor—3/60/440. 1725 r.p.m.
1—2 h.p. ball bearing—splash proof gearhead motor—3/60/440. 1725 r.p.m.

PRESS ROLLS

Various sizes.

PULLEYS

Various cone and assorted pulleys.

PULP STACKER

1—Link Belt Company Pulp Stacker, 30 ft. conveyor, 2½ ft. wide, self propelled, with motors.

PULPER

1—Jones Pulper. Complete with motor and drive.

PUMPS

2—Weil Pump Co.—100 g.p.m.—100 P.S.I. including 15 h.p. motors (new equipment).
1—Bell & Gossett—300 g.p.m.—120' head—including 15 h.p. motor.
1—Goulds Sump Pump—50 g.p.m.—20' head —including motor.
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.

REEL

1—72" Beloit Reel.

ROLLS

500—Brass tube-steel tube—rubber covered iron rolls—various sizes.

SCREEN PLATES

20 Plates cut .016.
10 Plates cut .008.
Also other sizes and cuts in stock.

SHEETER

1—136" Moore & White Sheeter, duplex, with layboy.

SLITTERS AND WINDERS

1—102" Cameron—Type 18.
1—72" Cameron—Type 28-8-7-D (shear cut).
1—62" Cameron—Type 10-10-AJ.
1—50" Cameron—Type 24-2L.
1—42" Cameron—Type 40-4-B.
1—42" Cameron—Type 28-8-7 (shear cut).
1—42" Cameron—Type 24-2A.
1—42" Cameron—Type 9-5.
1—42" Cameron Constant Tension, with pneumatic control.
1—30" Langston.

SQUEEZE ROLLS

2—Rubber Squeeze Rolls, 20¾" diameter x 102" face.

STOCK PUMPS

1—10 x 20 Shartle Duplex.
4—7 x 16 Shartle Duplex.
Numerous other Centrifugal Stock Pumps. Advise as to your requirements.

SUCTION COUCH ROLL

1—Sandusky 14⅞" diameter x 103" drilled face.

SUCTION PRESS ROLL

1—Downingtown Suction Press Roll 16" diameter x 66" drilled face.

TRIMMER

1—56" Smith & Winchester—Undercut.

TURBINE

1—150 h.p. Westinghouse Type C-Gear Turbine (Recently rebuilt).

VACUUM PUMPS

1—#4 Nash Hytor Vacuum Pump.
1—Sandusky 8 x 10.

WAXING MACHINE

1—62" Mayer Waxing Machine.

YANKEE DRYERS

2—8' diameter x 175" face.

We are always in the market to purchase your surplus or idle machinery. What have you to offer?
Wanted Cylinder and Fourdrinier Machines (complete mills).

Paddy Ross, Pres. **J. J. ROSS COMPANY** Ben Kurs, Treas.

250 Frelinghuysen Ave. Tel.—Bigelow 3-3720 Newark 5, N. J.

FOR SALE

1—Fourdrinier Machine. Voith inlet. Wire 121" x 61' 5½". 22" suction couch. One suction press—two conventional presses — one smoothing press. 21 dryers 60" diameter, and four felt dryers 60" diameter, and four felt dryers 48". One 8-roll and one 10-roll calender stack. One 2-drum upright slip belt reel. One 2-drum winder. Spiral bevel gear drives.

1—Fourdrinier machine, wire 110" x 60'. One Millspaugh 22" suction couch. Two main presses. 29—dryers 48" diameter. One 9-roll calender stack. One 2-spool reel. Bevel mortise gear drive.

1—Yankee Fourdrinier machine, wire 90" x 38'5". Millspaugh suction couch. Yankee dryer 10'6" dia. with pressure roll, frames, etc., English type reel. Warren winder. D. C. driving motor.

1—Fourdrinier machine, wire 81" x 50'. Millspaugh suction couch. Two main presses. One lead dryer and 18 dryers 36" dia. and two felt dryers. Three-roll calender. One two-spool reel. One M & W winder. Spiral bevel gear drives.

1—6-cylinder machine, molds 100" wide. Beloit suction drum roll. Four pair primaries. Three main presses. 66 dryers 42" dia., two calender stacks. One Black-Clawson duplex cutter. One two-spool upright reel. Spiral bevel gear drives.

1—6-cylinder machine, molds 100" wide. Beloit suction drum roll. Four pair primaries. Three main presses 66 dryers 42" dia., two calender stacks. One Black-Clawson duplex cutter. One two-spool upright reel. Spiral bevel gear drives.

Press Sections

3—main presses complete with frames, felt equipment, press rolls 18 x 97.

5—pair Black-Clawson main press housings.

Reels

1—132" two-spool upright slip belt.

1—Beloit 116" Uniform speed reel.

Suction Rolls

1—Beloit suction couch 30" x 184"

1—Millspaugh suction couch 22" x 140"

1—Millspaugh suction couch 18" x 110"

1—Millspaugh suction couch 14 9/16" x 88"

3—Beloit suction presses 18" x 72"

1—Downingtown extractor roll 24" x 104"

Rolls—Calender, press, wire, felt, etc.

We have a very large stock of various size rolls of all types.

60—Al wire rolls 7 x 86

Winders

1—72" Cameron, Model 10-5

1—116" Moore & White 4-drum, 60" dia. rolls

1—120" Warren

Beaters

3—Dilts iron tub high speed bandless. Rolls 56 x 48. Texrope drives—Taylor recording instruments.

Calenders

1—4-roll heavy duty calender stack, 84" wide

1—7-roll heavy duty calender stack, 84" wide

1—4-roll heavy duty calender stack, 92½" wide

1—9-roll heavy duty calender stack, 92½" wide

1—4-roll duty calender stack, 104" wide

1—7-roll heavy duty calender stack, 108" wide

1—11-roll heavy duty calender stack, 108" wide

1—9-roll heavy duty calender stack, 124" wide

Several good heavy box type calender housings. Hundreds of good calender rolls ranging from 54" to 143" face of various diameters.

1—54" 7-roll super calender

1—74" 7-roll super calender

Classifiners

3—Dilts classifiners

Cutters

1—109" Hamblet duplex cutter

1—110" Black-Clawson heavy duplex cutter

1—110" Beloit duplex cutter and slitter

1—114" Beloit duplex cutter

1—116" Downingtown duplex cutter and slitter

1—124" Beloit duplex cutter and slitter

Dryers

25—dryers 36" x 94" with double deck frames, gears, and bearings and top and bottom felt equipment.

Dryer Frames

Enough triple deck heavy duty frames for 56 dryers, 42" diameter.

Drives

2—Lewellen vertical variable speed drives, size 114, ratio 3 to 1, anti-friction bearings.

Grinder

1—112" Seybold knife grinder

Jordans

4—Noble & Wood Mammoth

1—E. D. Jones Majestic

3—#2 Miami Jordans with 100 hp motors, 3 phase, 60 cycle, 440 volt

1—#2 Miami Jordans

2—#2 Appleton Jordans

1—#1 Emerson Jordans

2—Jones Standard Jordans

4—Noble & Wood Monarch

2—Black-Clawson #2

2—Noble & Wood Pony

1—Noble & Wood experimental

SHARTLE BROTHERS MACHINE CO.

MIDDLETOWN, OHIO

M-24

FOR SALE

BEATERS
1—Iron bob 84x84 Shartle breaker
1—Dilts high speed with roll 50x48

CUTTERS
1—136" Horne duplex with duplex layboy
1—100" Hamblet duplex with duplex layboy
1—94" Olark single with layboy
1—84" Olark single with layboy
1—70" Clark
3—48" Hamblet

DRYERS
1—12 ft. x 186" Yankee
1—12 ft. x 136" Yankee
2—8 ft. x 174" Yankee
3—8 ft x 174"
4—48 x 118"
3—48 x 186"
1—48 x 89"
16—36 x 65"

FOURDRINIER PARTS
1—Wire 50' x 119" anti friction with 18" suction couch and three nets presses, rolls 28 x 108".
1—100" Fourdrinier Part with 30" suction couch, 20" diameter breast roll, 8" diameter table rolls.

JORDANS
1—No. 2 Appleton, anti friction, with 100 HP motor
1—No. 5 Miami, anti friction
1—No. 2 Dillon
3—Noble & Wood Pony

MOULDS
1—36 x 125"
1—60 x 84"
1—48 x 84"
1—86 x 84"

PAPER MACHINE
1—108" trim combination machine
1—94" trim facial tissue and M G machine with 8' dia. Beloit dryer
1—84" Fourdrinier paper machine

PUMPS
2—12 x 12 Gould triplex
1—10 x 20 Shartle duplex
1—7 x 10 Gould triplex

SCREENS
3—No. 2 Bird
Flat screens, 3 to 18 plate
Leith Walk and Moore & White rotary

SLITTERS
1—234" Rice Barton
1—150" Moore & White four drum
1—150" Warren two drum
1—130" and one 129" Pusey & Jones two drum
1—112" Kidder
1—62" Langston
1—50" Cameron
1—32" 44 W Cameron

SUCTION ROLLS
1—30 x 180" Couch
1—62 x 186" Press
1—25 x 186" Couch
1—18 x 149" Couch
1—18 x 92" Couch

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1—Baker electric truck, model D T 0
1—Walker electric highway truck, 4000 lb. Capacity, Model 42 with generator
1—Automatic tractor and pilot

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FOR SALE

DRYERS
150—Dryers 36" and 48" dia., 68" to 160" face, frames, gears and bearings.

BEATERS
8—Beaters 1200 to 2500# capacity.

JORDANS
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2—Smith & Winchester Jordans, Bronze Filled.
2—Noble & Wood Monarch Jordans, Bronze Filled.
1—Noble & Wood Pony Monarch Jordan.

REFINERS
2—12" Wiener Refiners.

SCREENS
1—14 Plate Packer Type Flat Screen.
3—12 Plate Appleton Flat Screens.
1—12 Plate Harmon Flat Screen.
1—10 Plate Packer Screen.
1—No. 2 Bird Rotary Screen.
1—No. 1 Bird Rotary Screen.

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1—96" five roll calender Stack.
1—88" Seven roll calender Stack.
1—82" Seven roll calender Stack.

SUCTION ROLL
1—Downingtown Rotary Felt Suction Roll 12" x 86" face.
1—168" Fourdrinier with 25" dia. Suction Roll.

The above is only a few of the items available. We can furnish single rolls or complete Paper Mills.

Osborne Paper Mill Equipment Corp.
Fulton, New York **Tel. 54**

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FOR SALE

1—Triple Effect Zaremba Evaporator, 84" diameter, each effect 1200 sq. ft. of heating surface, 440—1" steel tubes, 2 tilt traps, 2 moisture separators, interconnecting piping and barometric condenser, traps and 3 liquid level controllers. Vacuum pumps are not included. Available for immediate shipment. May be inspected at any time.

2—#420 Black & Clawson 10" x 16" Triplex Geared Stock Pumps, bronze fitted, belt drive, 30" x 10" pulley.

2—Pusey & Jones Triplex Stock Pumps, 10" diameter cylinder, 20" stroke, 25 revolutions of crank shaft will throw 469 gallons. Pumps driven on jack shaft arrangement, gear and pinion drive.

1—Duo-arrangement comprising Van de Carr patent stock inlet combined with two standard slices of 14" and 8" high standard design with center and end adjustment supports on adjustable side frames. Stock inlet Pusey & Jones design, 30" high, equipped with motor driven direct-connected perforated distributor roll, adjustable device for leveling the sheet, adjustable deckle in-plates, gauge glass and necessary supporting frames.

3—Washer Cylinders, 42" diameter x 84" face.

24—Brass Table Rolls, 7" diameter x 196" face, equipped with Timken Roller Bearings #373-372.

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M-24

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8 Air Dry Tons per day of pure chestnut wet lap available for immediate shipment. Write for details and sample.

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FOR SALE: N. J. Mounting Machines Models 57 & 58, 44" & 65" Paper Power Cutters; Fuchs & Lang 40" Coater; Beck Sheeters 36" & 55"; No. 3 Miehle 33x46; 22x39 & 70x78 Sheridan Die Cutters; 30" & 40" Slitters & Rewinders; 14x22, 20x30, 26x38 Thomson Die Cutters; No. 10 Babcock Die Cutters 55". Also complete Mounting & Finishing Division with machines like new. Write for listing and prices on these and other Paper Box and Paper Converting Machines. Selling out on pre-moving sale. Address Box 49-121 care Paper Trade Journal. A-28

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New 44" National Automatic Clamp Power Cutters, with A.C. motors — carried in stock, ready immediate shipment.

Also specializing in the NEW 57" National Hydraulic—just out. Send for illustrated circular on this wonderful smooth running machine. Not a single gear on it.

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78" Hamblet Sheeter, with Hamblet layboy and 10 roll backstand. Immediately available. Can be seen in operation. $3500.

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Roll Pasting Equipment for 62" machine, including paste mixing tanks, pump, applicator laminating rolls, dryers, gears, steam joints, etc. For further information, write to Box 49-128, Paper Trade Journal. A-7

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3" and 4" New Steel Pipe cut to length and slotted per specification.

ALTOONA PIPE & STEEL SUPPLY CO.
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FOR SALE

Supercalender—One modern right-hand 94" eleven roll web Norwood stack, speed range 50 feet to 2,000 feet per minute with automatic weighing control capable delivering one ton per lineal inch bottom nip. All rolls equipped with anti-friction bearings. Reliance variable speed drive with MG sets, driven by synchronous motor wound for 3 phase, 60 cycle, 2300 volt. Reply Box 49-158 care Paper Trade Journal. A-7

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4-COLOR HENSCHEL
ANILINE PRINTING PRESS

Handles 32" width rolls and gives a 30" printing surface.

Equipped with a Drying Tunnel, 4 Gray-Mills Electric ink pumps and 18 extra printing cylinders.

Suitable for printing CELLOPHANE, Cellulose Acetate, Aluminum foil and similar flexible packaging materials. Also suitable for handling certain light grades of paperboard and wallpaper.

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One brand new 84" Hamblet Model 28 Roller Bearing Duplex Cutter with slitting attachment and Simco Static Eliminator, Hamblet Duplex Layboy for two piles, and two roll backstand for 38" diam. rolls. Address Box 49-131 care Paper Trade Journal. M-24

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WANTED

Slitter, standard make, to handle paper 62" wide at 750 to 1000 feet per minute. Must be in first class working condition. Give full particulars and price. Reply to Box 49-119, Paper Trade Journal. M-24

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WANTED

Parts for No. 5 Fuller Bonnot Unit Mill Suction Type Pulverizer including ring gear, pinion, journals, bearing base and bearing caps, or complete unit. As alternate, would consider any other make pulverizer to grind 5,000 lb. per hour of 3/4" x 0" slack coal 55 to 70 grindability. Please advise condition, location and lowest cash price. Box No. 49-161 care Paper Trade Journal. M-31

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TO TRIM APPROXIMATELY
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Principals only.
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WANTED—Brightwood Box Machine. Address Box 48-224 care Paper Trade Journal. TF

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WANTED—Used or Rebuilt Ingersoll Glarimeter in first class condition. Address Box 49-154 care Paper Trade Journal. M-31

WANTED—One 48" diameter, 48" face, left hand Beater Roll suitable for use in Horne Beater. Address Box 49-159 care Paper Trade Journal. A-7

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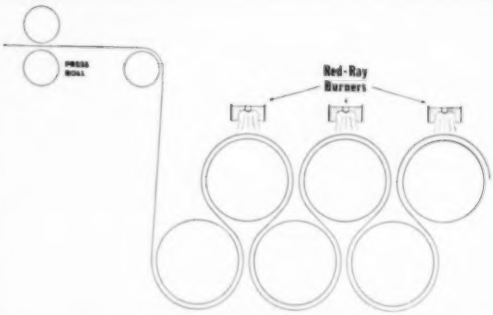

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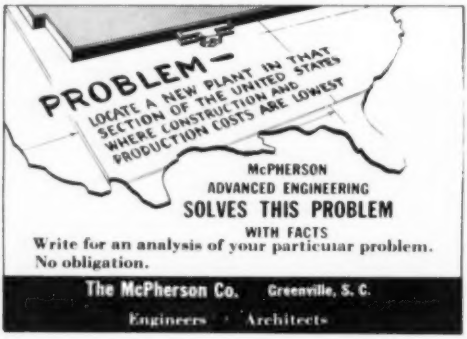

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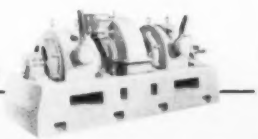
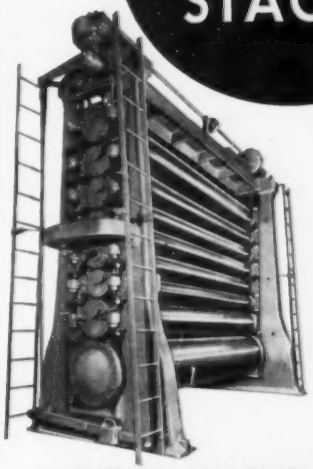


LOBDELL MACHINE CALENDER STACKS



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Bird Machine Co.
Nichols Engrg. & Research Corp.
Ross, J. O., Engrg. Co.
Shartle Brothers Machine Co.

Chains
American Manganese, Steel Div.
Chain Belt Company
Link Belt Company

Chemical Cotton Pulp
Hercules Powder Co.

Chemicals
Adell Chemical Co.
Alhydro, Inc.
American Anode, Incorporated
American Cyanamid Co., Industrial Chem. Div.
Ansul Chemical Co.
Buffalo Electro-Chemical Co., Inc.
Calco Chemical Co.
Calgon, Inc.
Cowles Chemical Company
Diamond Alkali Co.
Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuffs Corp.
Geigy Co., Inc.
Gottesman & Co.
Hercules Powder Co.
Hooker Electrochemical Co.
The Kinsley Chemical Company
Mallinckrodt Chemical Works
Monsanto Chemical Company
The Mathieson Alkali Wks., Inc.
National Aluminate Corp.
Niagara Alkali Company
Nopco Chemical Co.
Pennsylvania Salt Mfg. Co.
Philadelphia Quartz Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Rohm & Haas Co.
Solvay Sales Corp.
Virginia Smelting Co.
Witco Chemical Co.
Wyandotte Chemical Corp.

Chests
Kalamazoo Tank & Silo Co.

Cleaning Materials
Adell Chemical Company
Amer. Cyanamid & Chem. Corp.
Cowles Chemical Company
The Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Hercules Powder Co.
Monsanto Chemical Company
Nopco Chemical Co.
Oakite Products, Inc.
Pennsylvania Salt Mfg. Co.
Philadelphia Quartz Co.
Pittsburgh Plate Glass Co.
Solvay Sales Corp.
Wyandotte Chemicals Corp., J. B. Ford Division

Clutches
Appleton Machine Co.
Black-Clawson Company
Farrel-Birmingham Co.
Hardinge Company, Inc.
Hudson Sharp Machine Co.
Rodney Hunt Machine Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works

Coating Machinery
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Hudson Sharp Machine Co.
The Mayer Machine Co., Inc.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G., & Co., Inc.

Coating Materials
American Anode Div., The B. F. Goodrich Chem. Co.
E. I. Du Pont De Nemours & Co., Inc., Pigments Dept.
The Goodyear Tire & Rubber Company
Monsanto Chemical Company
Nopco Chemical Co.

Cogs
The N. P. Bowsher Co.

Compounded Latices
American Anode Div., The B. F. Goodrich Chem. Co.

Compressors
Allis-Chalmers Mfg. Co.
Ingersoll-Rand Co.
Nash Engineering Co.

Consistency Regulators
Askania Regulator Company
Bird Machine Company
DeZurik Shower Company
Paper & Industrial Appliances

Consulting Engineers
Birk, F. Paul
Ebasco Services
Frank W. Egan & Co.
Ferguson, Hardy S.
C. M. Guest & Sons
Hardy, George F.
Alvin H. Johnson & Co., Inc.
Main, Inc., Chas. T.
The MacPherson Company
Roderick O'Donoghue
The Rust Engrg. Co.
J. E. Sirrine & Co.
Stone & Webster Engrg. Corp
John Waldron Corp.
H. G. Weber & Co., Inc.
Frederick Wierk

Controllers
Askania Regulator Company
Black-Clawson Co.
The Bristol Co.
The Brown Instrument Co.
Cochrane Corp.

Controls
Askania Regulator Company
The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
Johnson Corp.
Stickle Steam Specialties Co.

Conveyors
American Well Works
Black-Clawson Company
Chain Belt Company
Frederick Iron & Steel, Inc.
Industrial Brownhoist Corp.
Link Belt Company
Murray, D. J., Mfg. Co.
Ross Engineering Corp., J. O
Shartle Brothers Mch. Co.

Core Cutters
Suburban Machine Co.

Cores
Fiberman Paper Co.
Hubbard Spool Co.
Rodney Hunt Machine Co.
Smith & Winchester Mfg. Co
Sonoco Products Co.
Walker-Goulard-Plehn Co.

Couplings
Black-Clawson Company
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John

Cranes
Cleveland Crane & Engrg. Co
Industrial Brownhoist Corp.
Link Belt Company
Whiting Corp.

Cup and Container Machines
Mercury Engrg. Corp.

Cutters
Dilts Machine Works
Gibbs-Brower Company, Inc
Thomas W. Hall Co.
Moore & White Co.
Perkins & Son, Inc., B. F.
The Smith & Winchester Mfg Co.
Taylor Stiles & Co.

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PMAS, as a slime control agent, combines advantages that have not heretofore been found in one material for this purpose. Summed up, they are as follows:

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(2) ***Economy***—PMAS provides complete control of slime at a cost usually under 10 cents per ton of paper.

(3) ***Convenience***—PMAS can be fed into the system with continuous automatic equipment, directly from the shipping container.

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(6) ***Reduced Clean-Up Time*** — Paper mills adopting PMAS for slime control, report decreases in clean-up time amounting to as much as 80%.

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M. W. Jenkins Sons, Inc.
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Raybestos-Manhattan Inc., Manhattan Rubber Division
Valley Iron Works Co.

Deasphalting Chemicals
Adell Chemical Company

Deckle Straps
Stowe Woodward, Inc.

Deckle Webbing
Williams-Gray Co.

De-Inking
Adell Chemical Company
Buffalo Electro-Chemical Co., Inc.
Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
Roderick O'Donoghue
Shartle Brothers Machine Co

Deinking Chemicals
Adell Chemical Company
E. I. Du Pont De Nemours & Co., Inc., Pigments Dept.
General Dyestuff Corp.
Kinsley Chemical Co.
Monsanto Chemical Company
Philadelphia Quartz Co.

Densometers
W. & L. E. Gurley

Design Construction
Ebasco Services

Detergents
Adell Chemical Company
Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

Dewaxing Chemicals
Adell Chemical Company
General Dyestuff Corp.
Nopco Chemical Co.

Digesters
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
Combustion Engrg. Co., Inc.
Foster Wheeler Corp.
General American Trans. Corp.
Lukenweld
Pusey & Jones Corp.

Dirtee
Bird Machine Co.

Dispersing Agents
Adell Chemical Company
Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.

Doctors
Bird Machine Company
Black-Clawson Company
Downingtown Mfg. Co.
Lobdell Co.
Lodding Engineering Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

Doctor Blades
Bird Machine Company
Black-Clawson Company
Lodding Engrg. Corp.
Raybestos-Manhattan Inc., Manhattan Rubber Division
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

Driers
Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc
Hardinge Company, Inc.
Lukenweld
The Moore & White Co.
Murray Mfg. Co., D. J.
J. J. Ross Company
Red-Ray Mfg. Co., Inc.
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
The Youngstown Welding & Engrg. Co.

Where

Drives
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Bird Machine Co.
Black-Clawson Company
Chain Belt Company
Davis, Frank H., Co.
Dilts Machine Works
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Farrel-Birmingham Co.
General Electric Company
Gibbs-Brower Company, Inc.
Rodney Hunt Machine Co.
Link Belt Company
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Syco Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

Dryer Drainage
Stickle Steam Specialties Co.

Dusters
Appleton Machine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
M. W. Jenkins Sons, Inc.
E. D. Jones & Son Co.
Moore & White Co.
D. J. Murray Mfg. Co.
John Waldron Corp.

Dusting Brushes
M. W. Jenkins Sons, Inc.

Dyestuffs
American Cyanamid Company, Calco Chemical Div.
Ciba Company
E. I. du Pont de Nemours & Co., Inc.
Geigy Co., The
General Dyestuffs Corp.
National Aniline Division, Allied Chemical & Dye Corp.
C. K. Williams & Co.
Witco Chemical Co.

Embossing Rolls
The Appleton Machine Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Midvale Company
Northern Engraving & Mch. Co.
B. F. Perkins & Son, Inc.
John Waldron Corp.

Emulsifiers
Adell Chemical Company
General Dyestuff Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

Enzymes
Rohm & Haas Co.

Evaporators
Foster Wheeler Corp.
General American Transportation Corp.
Goslin-Birmingham Mfg. Co., Inc.
Murray, D. J., Mfg. Co.
Swenson Evaporator Co., Div. of Whiting Corp.

Expanders
Mount Hope Machinery Co.

Fans
General Electric Co.
B. F. Perkins & Son, Inc.
Ross Engineering Co., J. O.

Feeders
Hardinge Company, Inc.
Merrick Scale Mfg. Co.
Leeds & Northrup

Felts
Appleton Woolen Mills
Asten-Hill Mfg. Co.
Bulkley, Dunton Pulp Co., Inc.
Draper Bros. Corp.
Huyck & Son, F. C.
Lockport Felt Co.
Mt. Vernon-Woodbury Mills, Inc.
Morey Paper Mill Supply Co.
Orr Felt & Blanket Co.
Shuler & Benninghofen
Waterbury Felt Co.
Waterbury, H., & Sons Co.
Williams-Gray Co.

To Buy

Felt Cleaners
Adell Chemical Company
Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp.
Nopco Chemical Co.

Felt Conditioners
Bird Machine Co.

Felt Guides
Black-Clawson Co.
Frank W. Egan & Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

Fillers
American Cyanamid Company, Industrial Chemicals Division
Johns-Manville Sales Corp.
W. H. Loomis Talc Corp.
A. M. Meincke & Son, Inc.
Vanderbilt Co., R. T.
Witco Chemical Co.

Filters
R. P. Adams Co., Inc.
Bird Machine Company
Cochrane Corp.
General American Transportation Corp.
Hardinge Company, Inc.
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp.
Witco Chemical Co.
Walworth Company

Fittings
Crane Company
Ladish Company
Phoenix Products Co.
Walworth Company

Flexible Couplings
Ajax Flexible Coupling Co.

Flooring, Grating and Treads
The Goodyear Tire & Rubber Company
Norton Co.
Raybestos-Manhattan Inc., Manhattan Rubber Division

Flow Boxes, Stainless-Clad
Lukens Steel Co.

Forming Machines
Black-Clawson Co.
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
Oliver United Filters, Inc.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

Friction Materials
Johns-Manville Sales Corp.
Raybestos-Manhattan Inc., Manhattan Rubber Division

Freeness Testers
Testing Machines, Inc.

Gaskets
The Goodyear Tire & Rubber Company
Raybestos-Manhattan Inc., Manhattan Rubber Division

Gears
American Manganese, Steel Div.
Black-Clawson Company
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Suburban Machine Co.
Valley Iron Works Co.
Waldron Corp., John
Westinghouse Electric Corp.

Grinders
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc
Lobdell Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

Grinding Wheels
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc.
Norton Company

Guides, Web
Askania Regulator Company
The Moore & White Co.
Mount Hope Machinery Co.
Bound Brook Engrg. Co.

Gums
National Starch Products Inc.
Stein-Hall Co., Inc.

Heads
Babcock & Wilcox Co.
Lukens Steel Company

Heat Exchangers and Recovery Systems
William Allen Son's Company
Foster Wheeler Corp.
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

Heating, Ventilating & Air Conditioning
The Appleton Machine Co.
Armstrong Machine Works
Cochrane Corp.
E. D. Jones & Sons Co.
General Electric Co.
Leeds & Northrup
Minneapolis-Honeywell Regulator Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

Appleton Machine Co.
Rodney Hunt Machine Co.
Ingersoll-Rand Co.
E. D. Jones & Sons Co.

Hoists

Hose (Air, Water, Suction, etc.)
The Goodyear Tire & Rubber Company
Raybestos-Manhattan Inc., Manhattan Rubber Division

Impregnants
American Anode Div., The B F. Goodrich Chem. Co.

Industrial Tractors
Clark Equipt. Co., Clark Tractor Div.
Towmotor Corp.

Ink Gravure
Gotham Ink & Color Co.

Instruments, Testing and Measuring
Askania Regulator Company
Bauer Brothers Co.
N. P. Bowaher
The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
The Foxboro Company
General Electric Company
W. & L. E. Gurley
Leeds & Northrup Company
National Technical Laboratories
B. F. Perkins & Son
Taylor Instrument Cos.
Testing Machines, Inc.
Williams Apparatus Co., Inc.

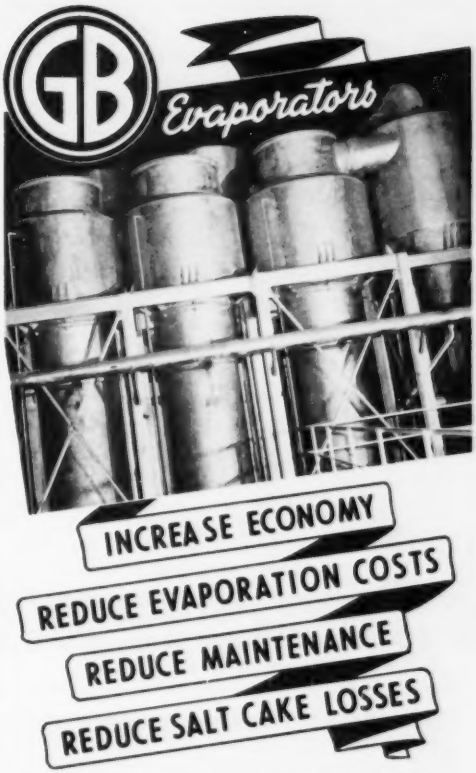
Joints
Johnson Corp.
Perfecting Service Corp.

Jordan Fillings
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

Knives
Black-Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Happenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

Knot Boring Machines
DeZurik Shower Company

Laboratory Equipment
William Allen Son's Company
Appleton Machine Co.
Bauer Brothers Co.
The Bigga Boiler Works Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories
Taylor Instrument Companies



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1500	Westghse.	HF	2300	233
1000	Al. Chlrs.	ANY	2300	240
800	Westghse.	C. W.	6600	587
600	Gen. Elec.	IM	440	350
500	Al. Chlrs.	ANY	2300	514
400	Gen. Elec.	IM	2300	900
300	Westghse.	CW	2300	367
250	Cr.Wh.	—	440	900
100	Al. Chlrs.	ANY	440	720
50	Gen. Elec.	IM	440	1800
35	Westghse.	CW	440	1200

SQUIRREL CAGE MOTORS

H.P.	Make	Type	Volts	Speed
1250	Al. Chlrs.	—	2300-440	3600
750	Gen. Elec.	KT	2300	690
400	Al. Chlrs.	Spl. pf.	2300	900
350	Westghse.	CS	2200	1800
250	Gen. Elec.	IK	2300	600
200	Westghse.	CS	440	720
150	Gen. Elec.	KT	2300	600
100	Al. Chlrs.	AR	440	514
75	Al. Chlrs.	AN	440	1200
60	Gen. Elec.	K	440	1800
50	Westghse.	TEFC	440	1200
40	Gen. Elec.	KT	440	3600
30	Al. Chlrs.	AN-204	220	900
25	Al. Chlrs.	AR	220	1200

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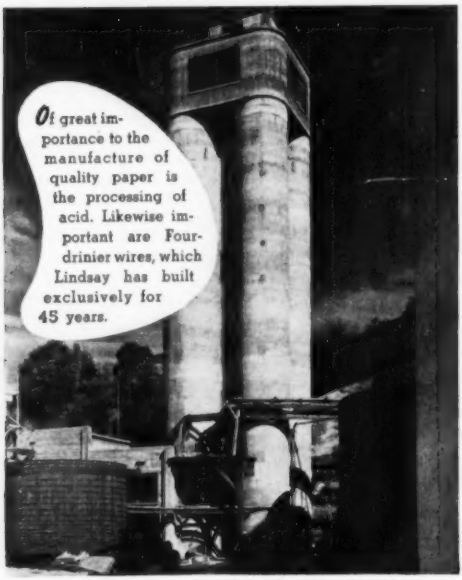
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Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

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The Wellman Engrg. Co.

Micrometers & Calipers
Farrel-Birmingham Co.
Montague Machine Co.
Lobdell Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

Moisture Content Control
Askania Regulator Company
Stickle Steam Specialties Co.

Motors and Generators
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Fairbanks, Morse & Co.
General Electric Company
Ingersoll-Rand Co.
Reliance Electric & Engrg. Co.

Nickel and Nickel Alloys
The International Nickel Co.

Nozzles
Link Belt Company

Packing Boxes
Johnson Corporation
The Moore & White Co.
Perfecting Service Corp.
Shartle Brothers Machine Co.

Packing
Johns-Manville Sales Corp.
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc.

Paint
American Marietta Co., Valdura Division

Paper Machines
Bagley & Sewall Co.
Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lukenweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

Paper Machine Slices
Black-Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

Paper Tube Machinery
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Suburban Machine Co.

Pasting Machines
Black-Clawson Company
Davis, Frank H., Co.
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

Penstocks
The Biggs Boiler Works Co.

Perforated Metal
Allis-Chalmers Mfg. Co.
Harrington & King Perforating Co.

Where

Pipe
American Cast Iron Pipe Co.
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Johns-Manville Sales Corp.
Ladish Company
Michigan Pipe Co.
Michigan Steel Casting Co.
National Tube Co.
Stowe-Woodward, Inc.
Walworth Company
Youngstown Welding & Engrg. Co.

Pipe Fittings
American Cast Iron Pipe Co.
The American Rolling Mill Co.
Crane Company
Ladish Company
Michigan Steel Casting Co.
Phoenix Products Co.
Walworth Co.

Pitch Control
General Dyestuff Corp.
Monsanto Chemical Company
Rohm & Haas Co.

Platers
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

Plates
Armco Steel Corp.
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
J. O. Ross Engrg. Corp.
Lukenweld
Lukens Steel Company
Timken Roller Bearing Co.

Plugs
The Appleton Machine Co.
Black-Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

Precision Sample Cutter
Testing Machines, Inc.

Preservatives
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

Pressure Vessels, Steel and Alloy
William Allen Son's Company
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
Combustion Engrg. Co., Inc.
General American Transportation Corp.
Foster Wheeler Corp.
The Midvale Company

Presses
Black-Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
The Moore & White Co.
Paper Converting Machine Co., Inc.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

Pulp Classifier
The Bauer Bros. Co.

Pulp Stock Valves
Crane Company
Record Fdy. & Mach. Co.
Shartle Bros. Mach. Co.

Pulpers
Bauer Brothers Co.
Dilts Machine Works
Shartle Brothers Machine Co.

Pulps
Brown Company
Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Elof Hansson, Inc.
Lyddon & Co. (America), Inc.
Parsons & Whittemore, Inc.

to Buy

Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.
Pulp Sales Corp.

Pulpstones
Norton Company

Pumps
Allis-Chalmers Mfg. Co.
American Manganese, Steel Div.
American Paper Mchy. & Engrg. Works, Inc.
American Well Works
Black-Clawson Company
Buffalo Pumps, Inc.
Byron Jackson Co.
Dorr Company
Downingtown Mfg. Co.
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